**Monthly Magnetic Bulletin July 2026**

# BOĞAZİÇİ UNIVERSITY
# KANDİLLİ OBSERVATORY and
# EARTHQUAKE RESEARCH INSTITUTE
# GEOMAGNETISM LABORATORY

https://jeomanyetizma.bogazici.edu.tr/

## *Magnetic Results from İznik Magnetic Observatory*





**BOĞAZİÇİ ÜNİVERSİTESİ**

**KANDİLLİ RASATHANESİ VE DEPREM ARAŞTIRMA ENSTİTÜSÜ**

**JEOFİZİK ANABİLİM DALI, JEOMANYETİZMA LABORATUVARI**

Yer manyetik alanının zamana göre değişimleri ve Türkiye için bölgesel değerleri Boğaziçi Üniversitesi, Kandilli Rasathanesi ve Deprem Araştırma Enstitüsü, Jeofizik Ana Bilim Dalı, Jeomanyetizma Laboratuvarı tarafından iki ayrı rasathanede yapılmaktadır. Bu rasathaneler;

- İstanbul-Kandilli Manyetik Rasathanesi (ISK) ,
- İznik Manyetik Rasathanesi (IZN) dir.

İstanbul-Kandilli Manyetik Rasathanesi; jeomanyetik ölçülerine sistematik olarak 1947 yılında başlamıştır. Jeomanyetik kayıtlar La Cour Variometresi ile 1947-2000 yılları arasında fotoğrafik kâğıt üzerine alınmıştır. ISK Manyetik Rasathanesi 50. yılında INTERMAGNET (Uluslararası Gerçek Zamanlı Manyetik Rasathaneler Ağı)'e bağlanmıştır. Dakikalık olarak kaydedilen manyetik veriler INTERMAGNET'e günlük veri paketleri halinde gönderilmektedir. Maalesef, jeomanyetik ölçüler doğal olmayan çevresel gürültülerden kolaylıkla etkilenebilmektedir. Bu sebeple; 2004 Ekim ayında İznik yakınlarında yeni bir manyetik rasathane kurulmuş ve 2007 yılında INTERMAGNET üyesi olmaya hak kazanmıştır. Çalışmalar Kandilli Rasathanesi İznik Deprem Zararlarının Azaltılması Merkezi ile ortak yürütülmektedir.

Yermanyetik alanının **H** (yatay bileşen), **D** (sapma açısı) ve **Z** (düşey bileşen) bileşenlerinde meydana gelen anlık değişimler flux-gate variometresi ile ölçülmektedir. **F** (toplam alan) mutlak ölçümleri overhouser ve proton manyetometresi, **D** ve **I** (eğim açısı) mutlak ölçümleri ise D/I teodolit sistemi ve bu sistem üzerine kurulu bulunan tek eksenli flux-gate manyetometresi ile yapılmaktadır. Mutlak ölçümler rasathanelerin baz eğrisi değerlerinin belirlenmesinde kullanılmaktadır ve yapılması son derece hassasiyet gerektirmektedir. Mutlak ölçüler haftada en az iki kez olmak üzere yapılmaktadır. Kayıtlarımızda uluslararası zaman dilimi kullanılmaktadır.

Bu bültende, Iznik Manyetik Rasathanesi'nde 01 – 31 Temmuz 2026 tarihlerinde kaydedilen jeomanyetik alan değişimleri **X** (kuzey bileşen), **Y** (doğu bileşeni) ve **Z** bileşenleri ve **F** (toplam alan) için günlük grafik formatında verilmiştir (Şekil-1). İstenilen gün ve saate ait sayısal manyetik veri, Kandilli Rasathanesi ve Deprem Araştırma Enstitüsü Müdürlüğü'ne yapılan resmi müracaat ile elde edilebilmektedir.

**BOĞAZİÇİ UNIVERSITY**

**KANDİLLİ OBSERVATORY and EARTHQUAKE RESEARCH INSTITUTE**

**GEOPHYSCIS DEPARTMENT, GEOMAGNETISM LABORATORY**

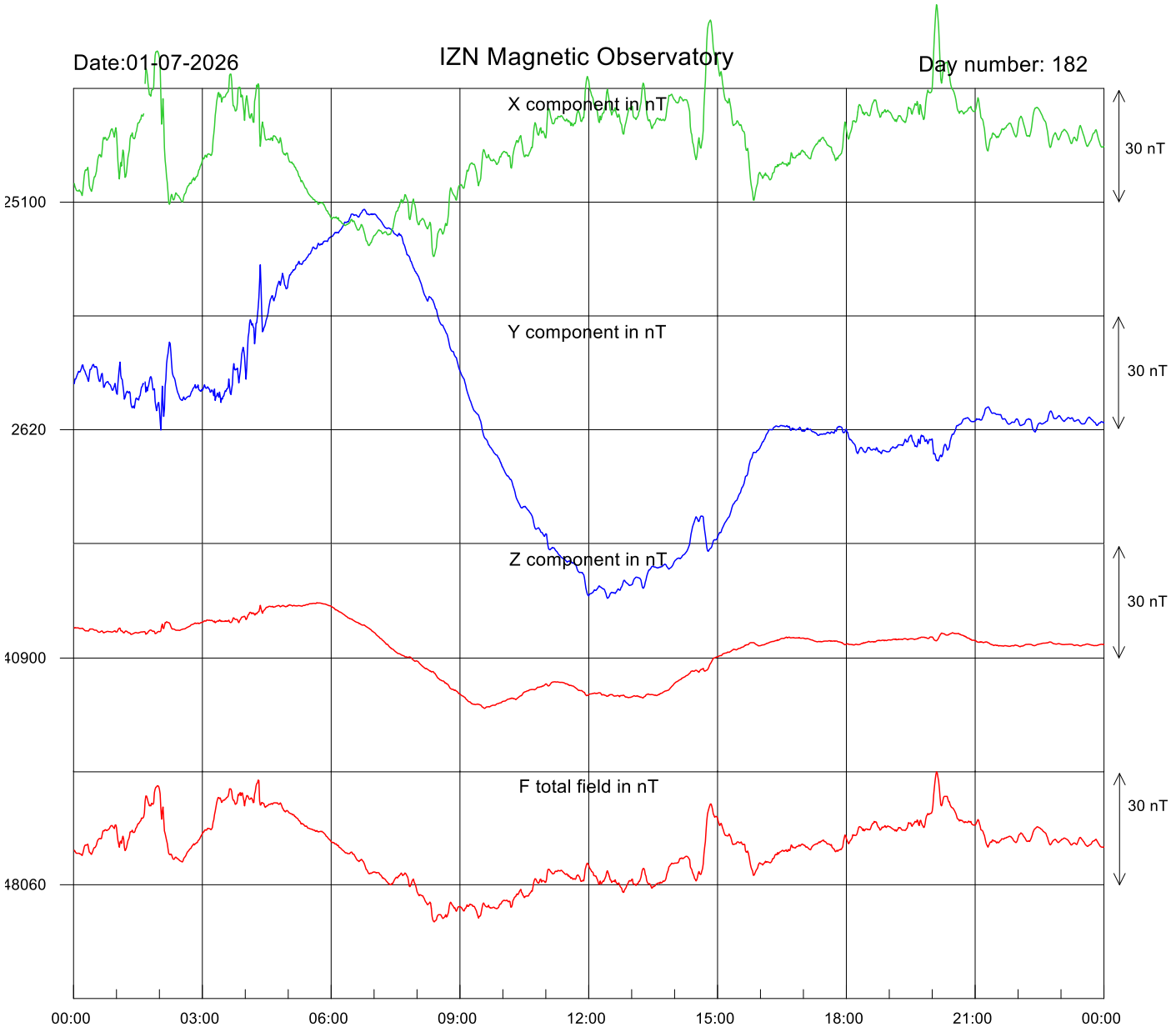
The temporal variations of the Earth's magnetic field and the regional variations within Turkey are recorded in Boğaziçi University, Kandilli Observatory and Earthquake Research Institute, Geophysics Department, Geomagnetism Laboratory. These measurements are recorded at two observatories. Those are;

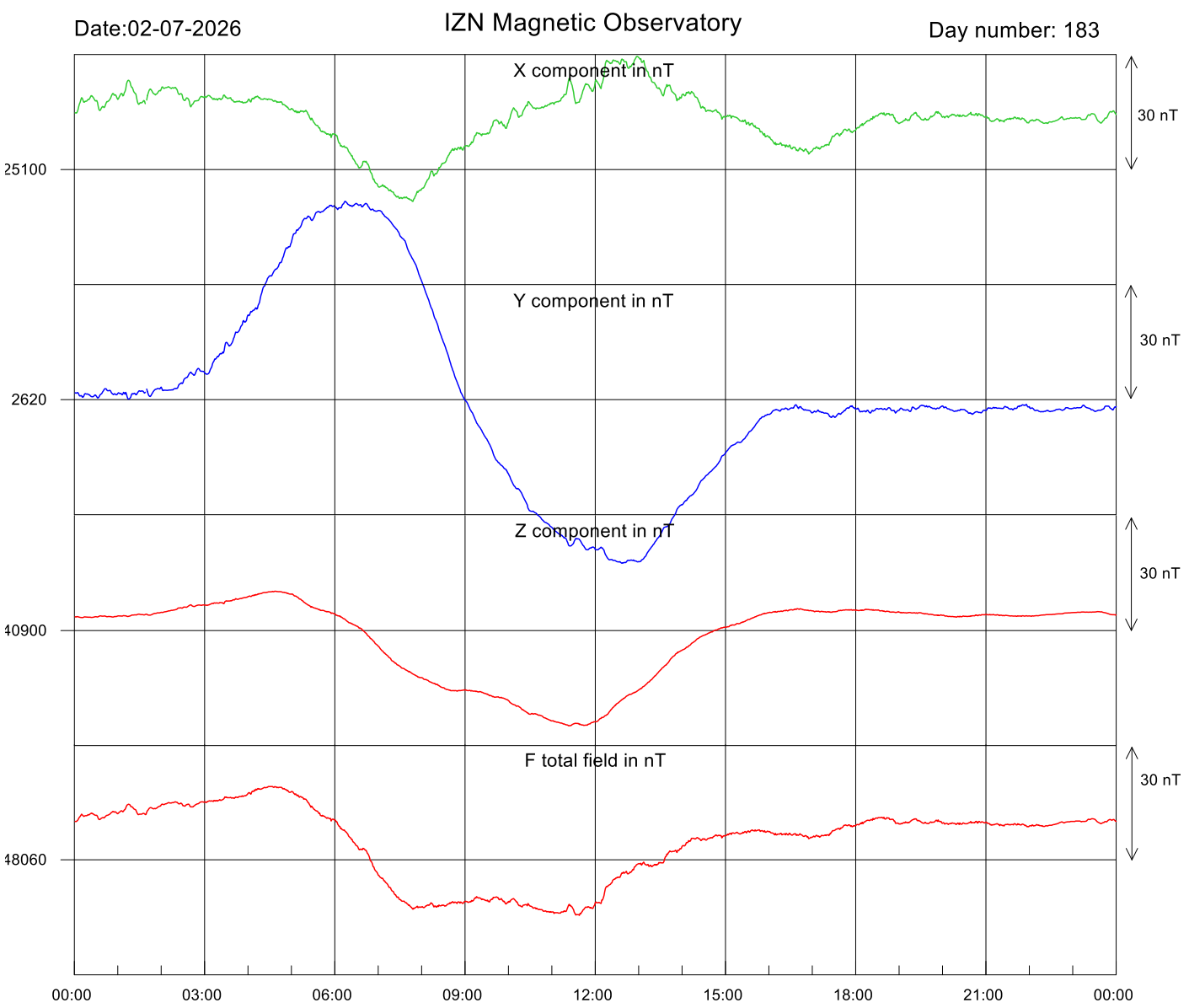
- İstanbul-Kandilli Observatory (ISK),
- İznik Magnetic Observatory (IZN).

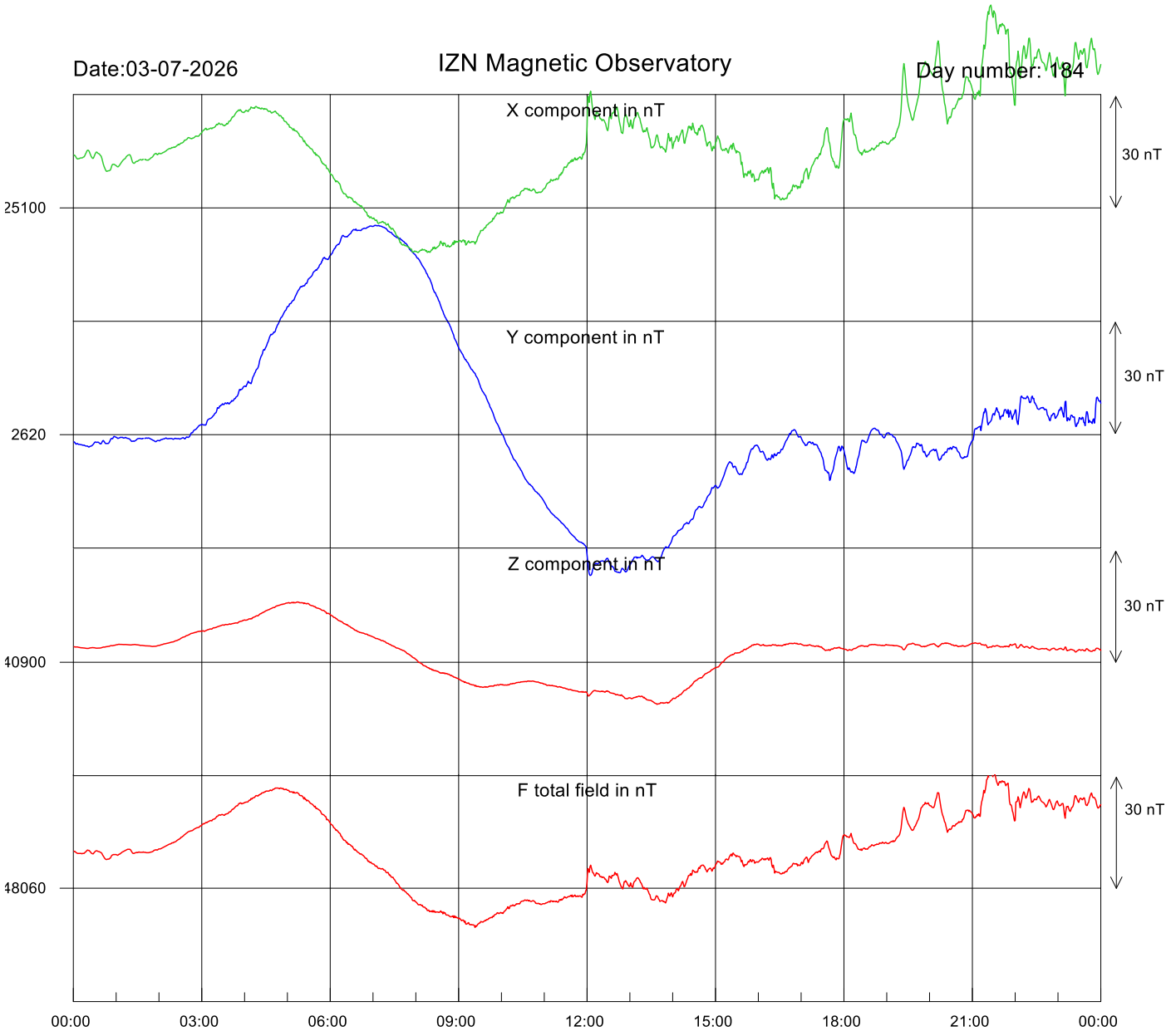
Istanbul-Kandilli Magnetic Observatory started its systematic geomagnetic measurements after 1947. Photographic paper magnetic data records between 1947–2000 are taken by using La Cour variometer. ISK Magnetic Observatory was a member of INTERMAGNET (International Real-Time Magnetic Observatory Network) in its 50th anniversary, 1997. The minute mean digital data of ISK were transferred to INTERMAGNET daily. Unfortunately, geomagnetic measurements are affected by the artificial noises. Therefore, we set up a new geomagnetic observatory near Iznik (formerly NICEA), and started observations in October 2004. IZN Magnetic Observatory has been the member of INTERMAGNET since 2007. Magnetic studies are co-operated with Kandilli Observatory Iznik Earthquake Hazard Mitigation Center.

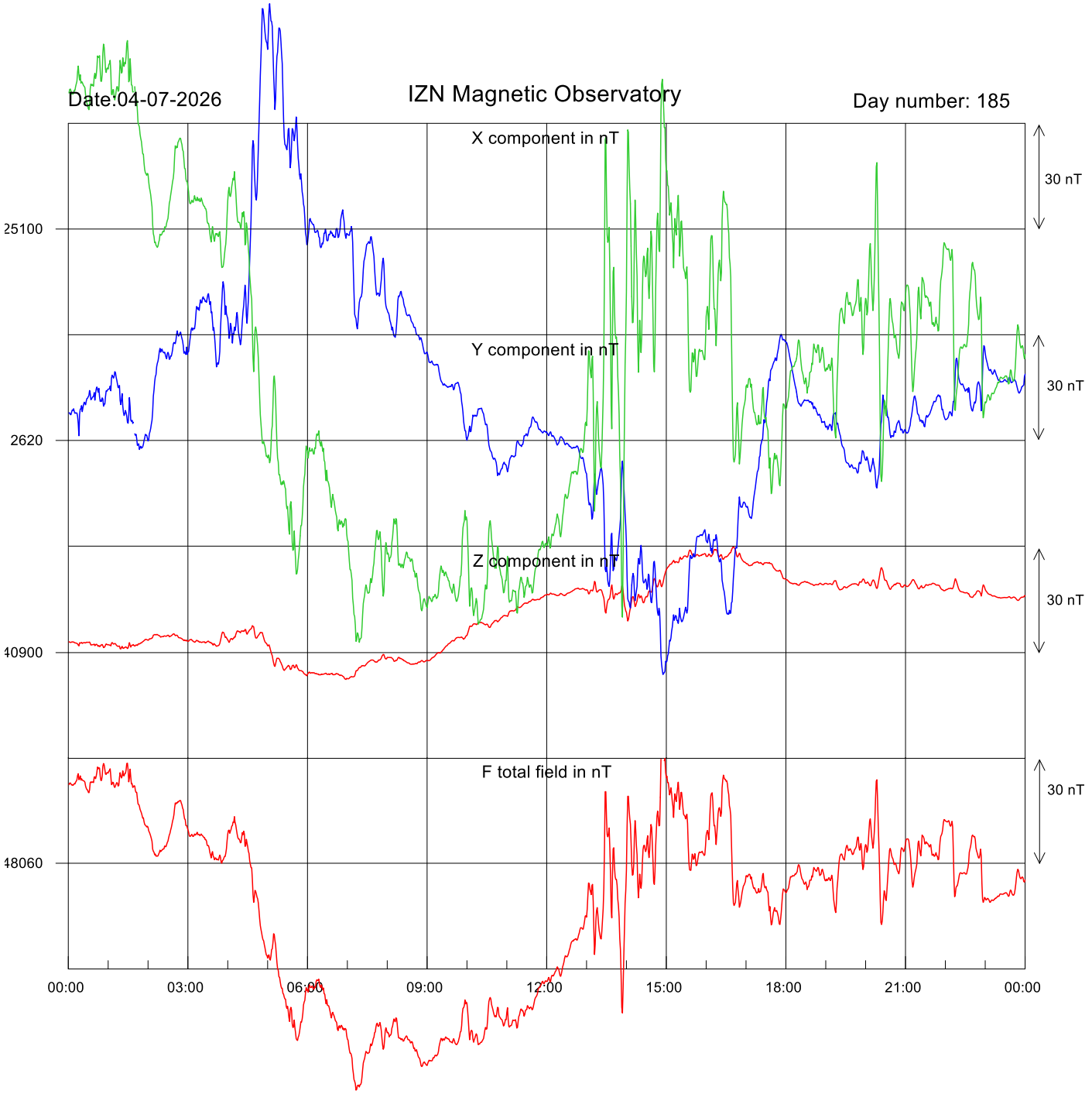
The variations of three components; **H** (horizontal component), **D** (declination angle) and **Z** (vertical component) of the Earth's magnetic field are observed with fluxgate magnetometers. Absolute measurements of **F** (total component) component is measured with overhauser and proton precession magnetometer, **D** and **I** (inclination angle) angle measurements are taken by using D/I theodolite and its single-axis flux-gate magnetometer. Absolute measurements are taken to produce the base line values. Throughout a year, these measurements are carried out twice a week or more if necessary. Universal time is used in our records.

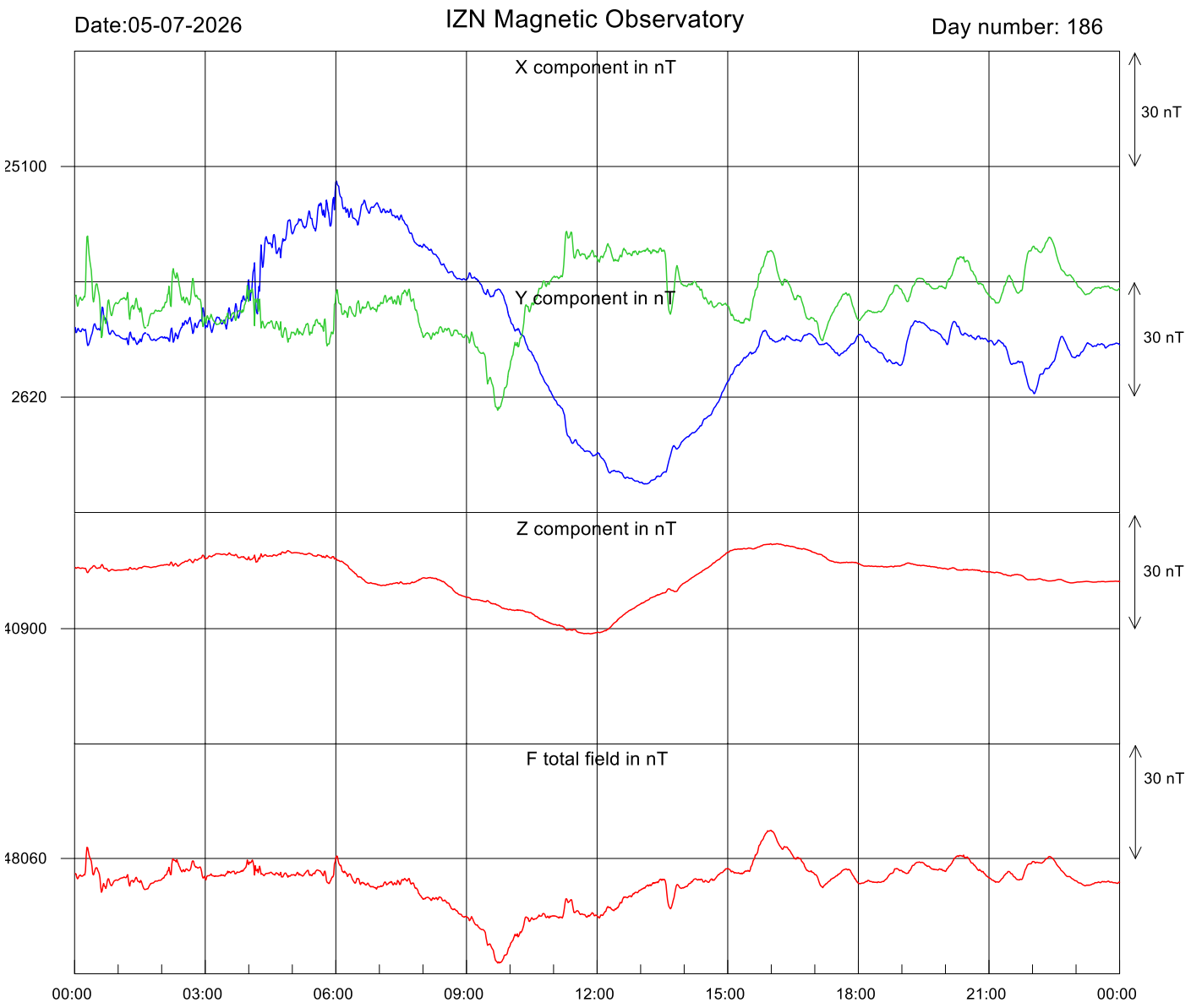
In this bulletin, geomagnetic measurement results obtained throughout July-2026 are given (Figure-1). Magnetic field values of a particular date could be obtained on request.

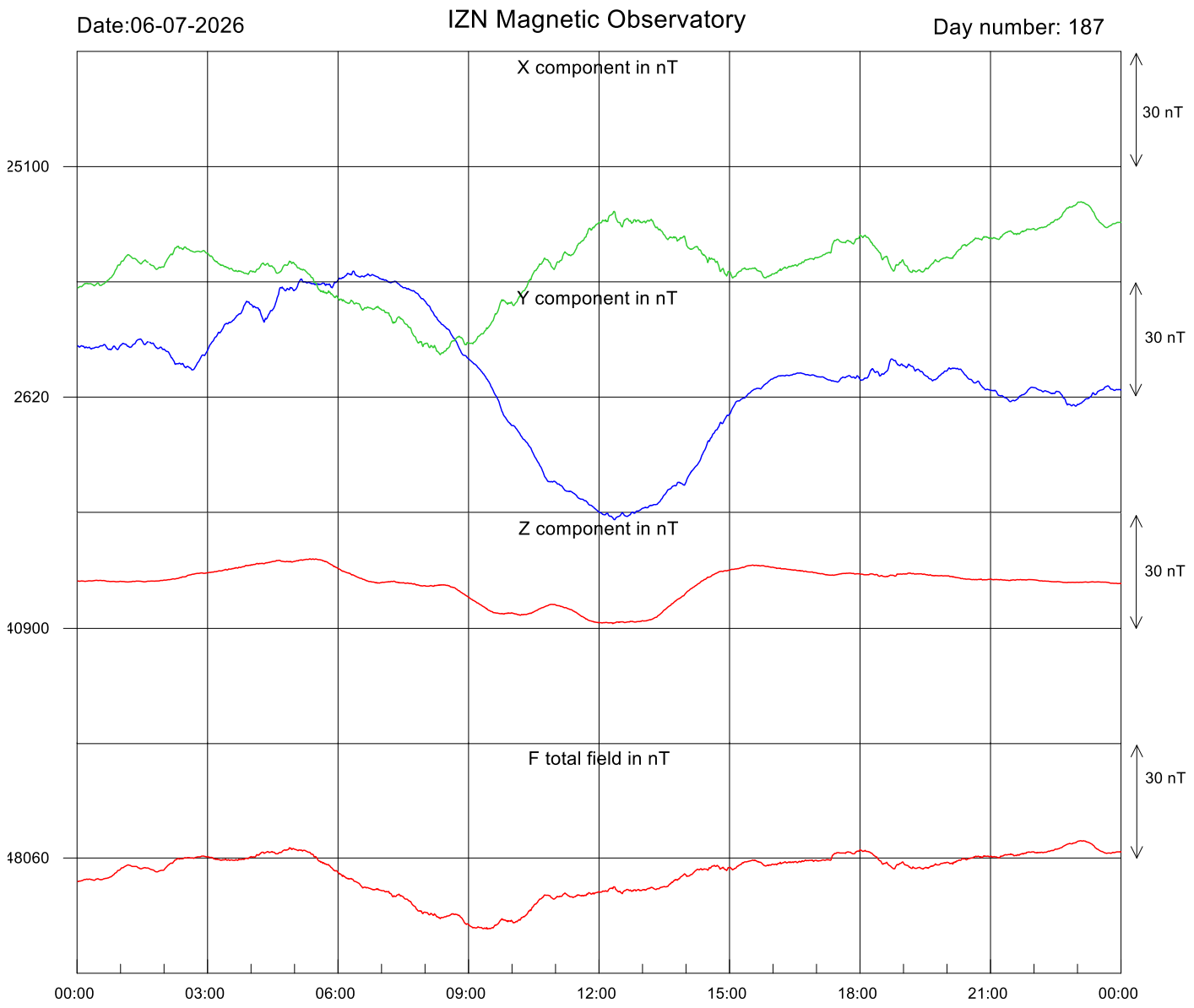

Date:01-07-2026
IZN Magnetic Observatory
Day number: 182
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

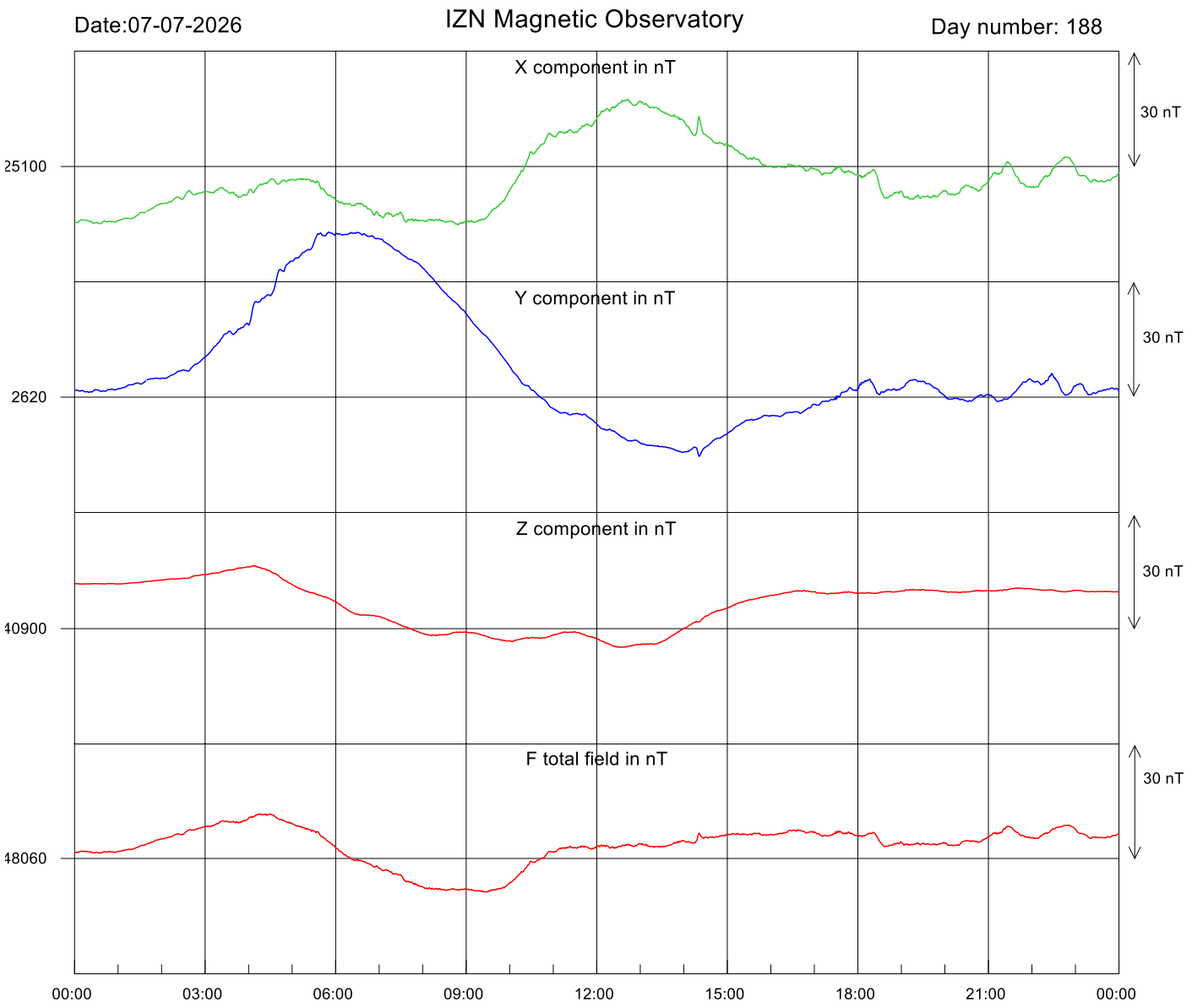

Date:02-07-2026
IZN Magnetic Observatory
Day number: 183
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

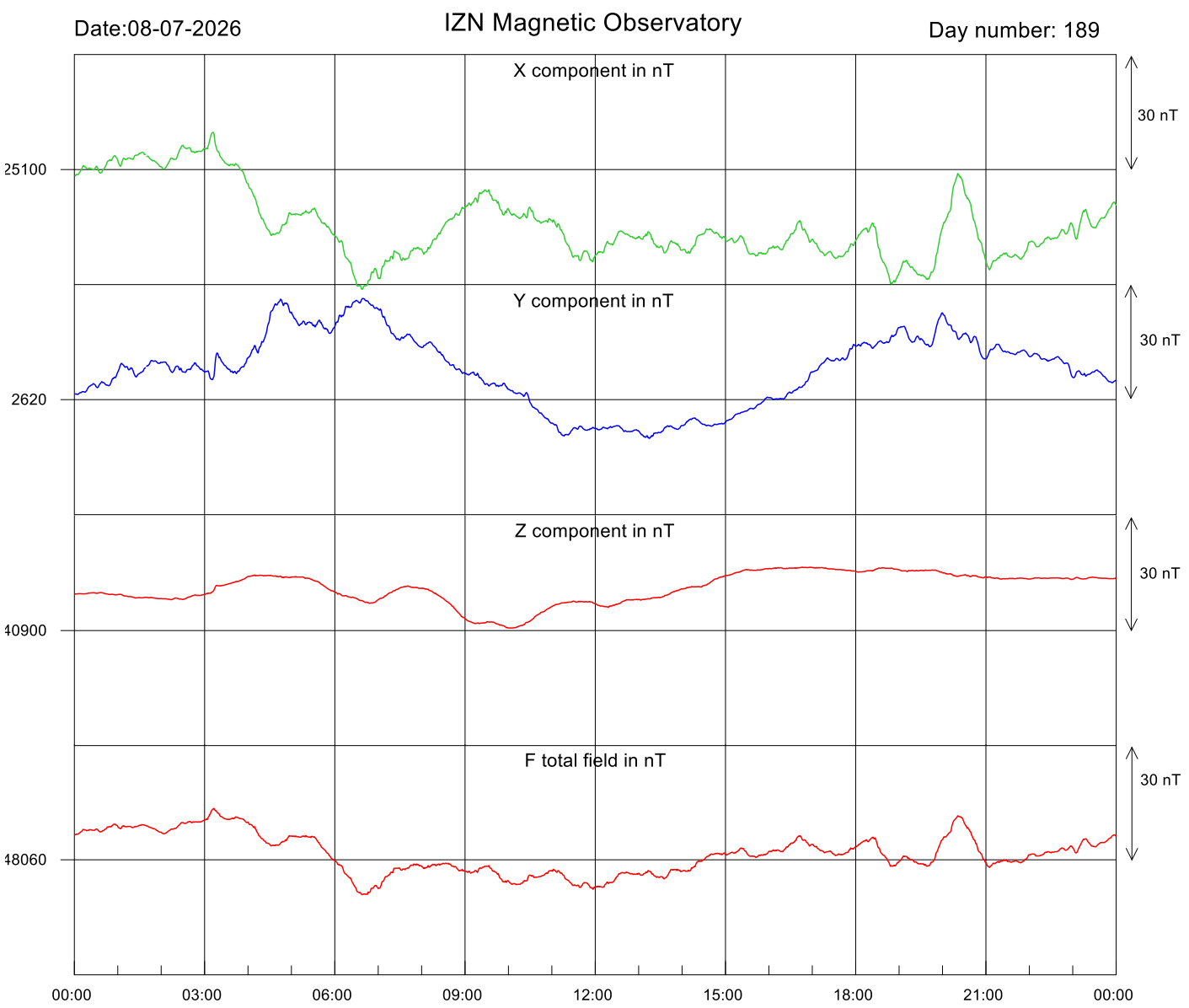

Date:03-07-2026
IZN Magnetic Observatory
Day number: 184
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

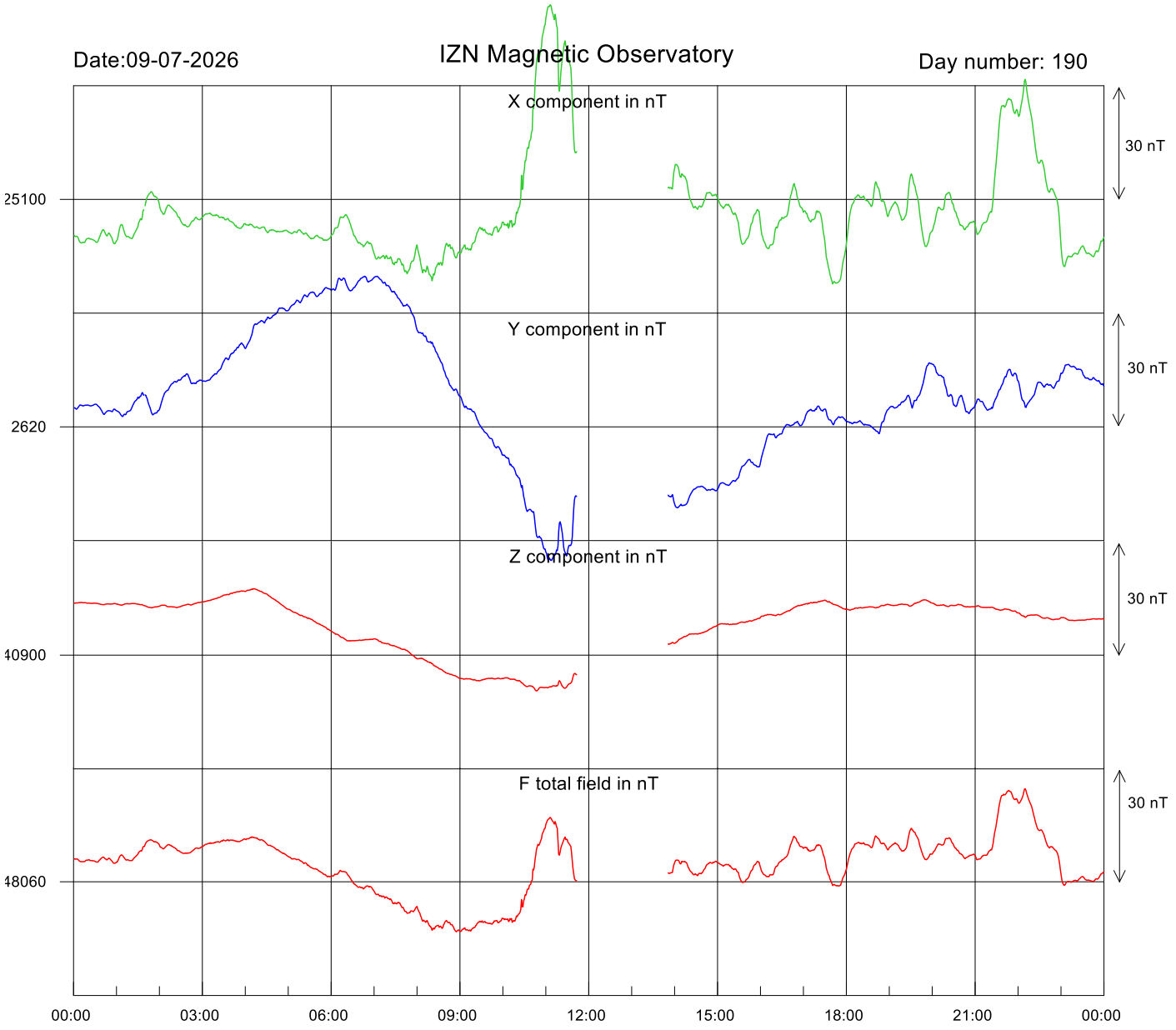

Date:04-07-2026
IZN Magnetic Observatory
Day number: 185
X component in nT
Y component in nT
Z component in nT
F total field in nT
25100
2620
40900
48060
30 nT
30 nT
30 nT
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

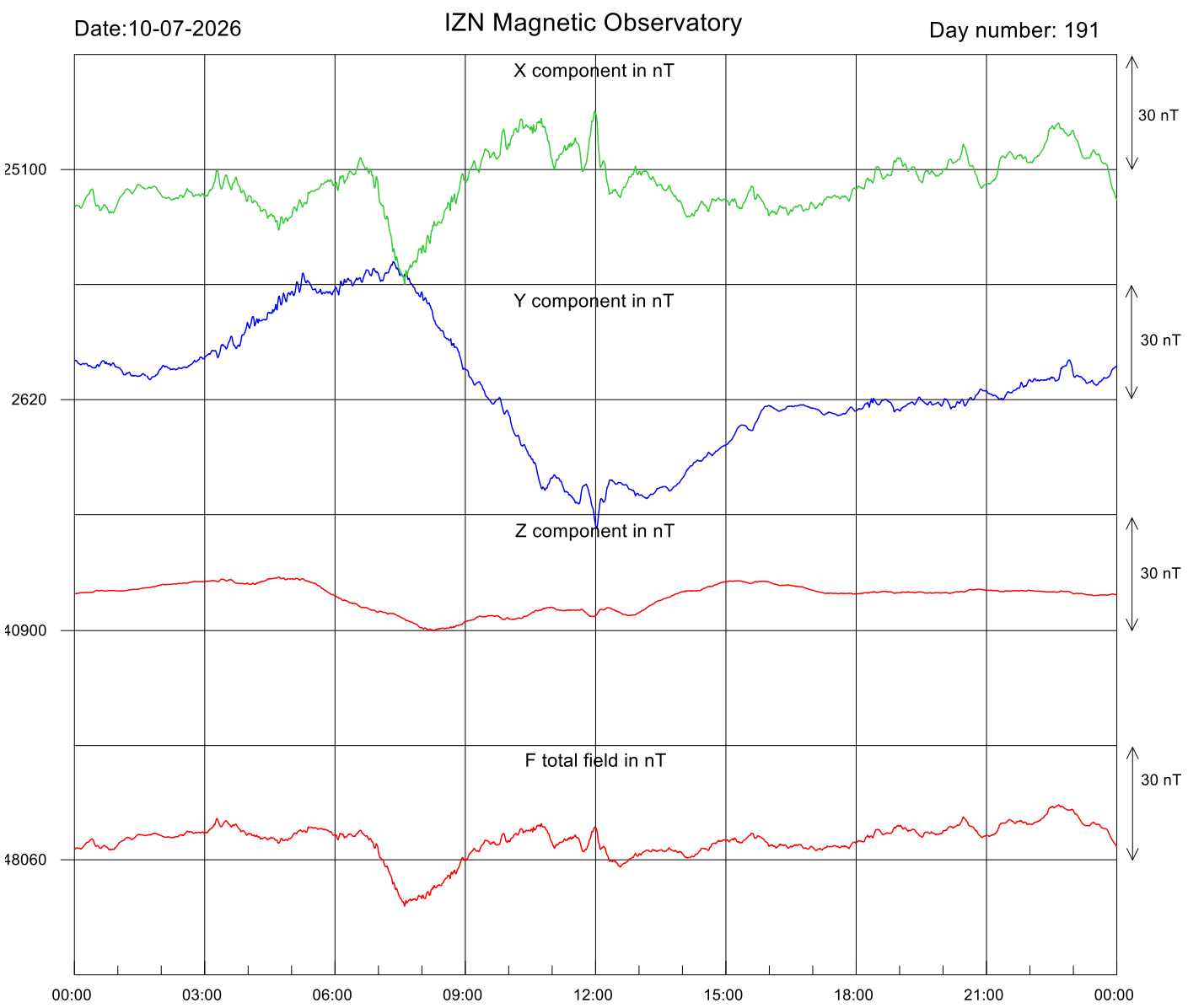

Date:05-07-2026
IZN Magnetic Observatory
Day number: 186
X component in nT
Y component in nT
Z component in nT
F total field in nT
30 nT
30 nT
30 nT
30 nT
25100
2620
40900
48060
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

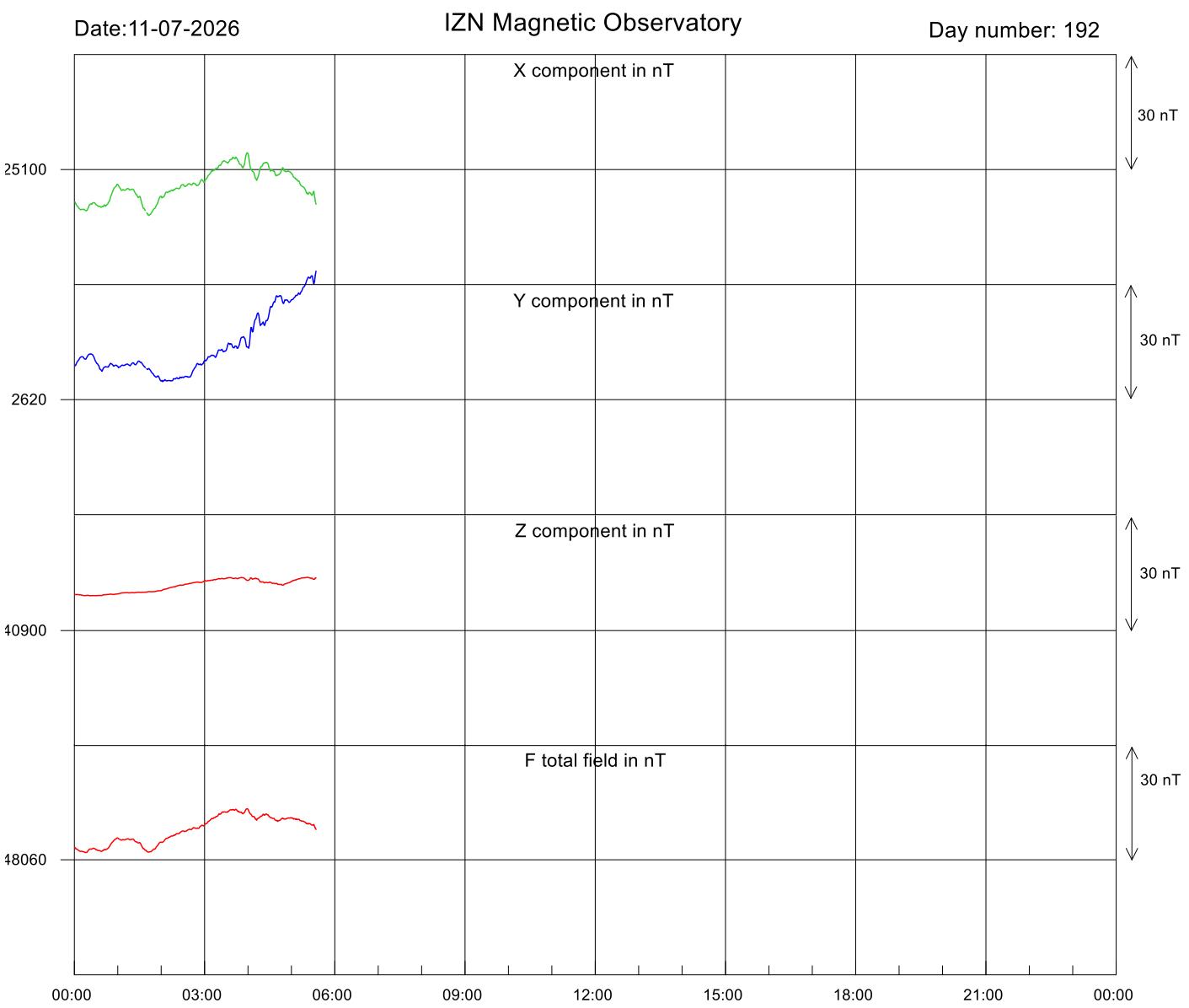

Date:06-07-2026
IZN Magnetic Observatory
Day number: 187
X component in nT
Y component in nT
Z component in nT
F total field in nT
30 nT
30 nT
30 nT
30 nT
25100
2620
40900
48060
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

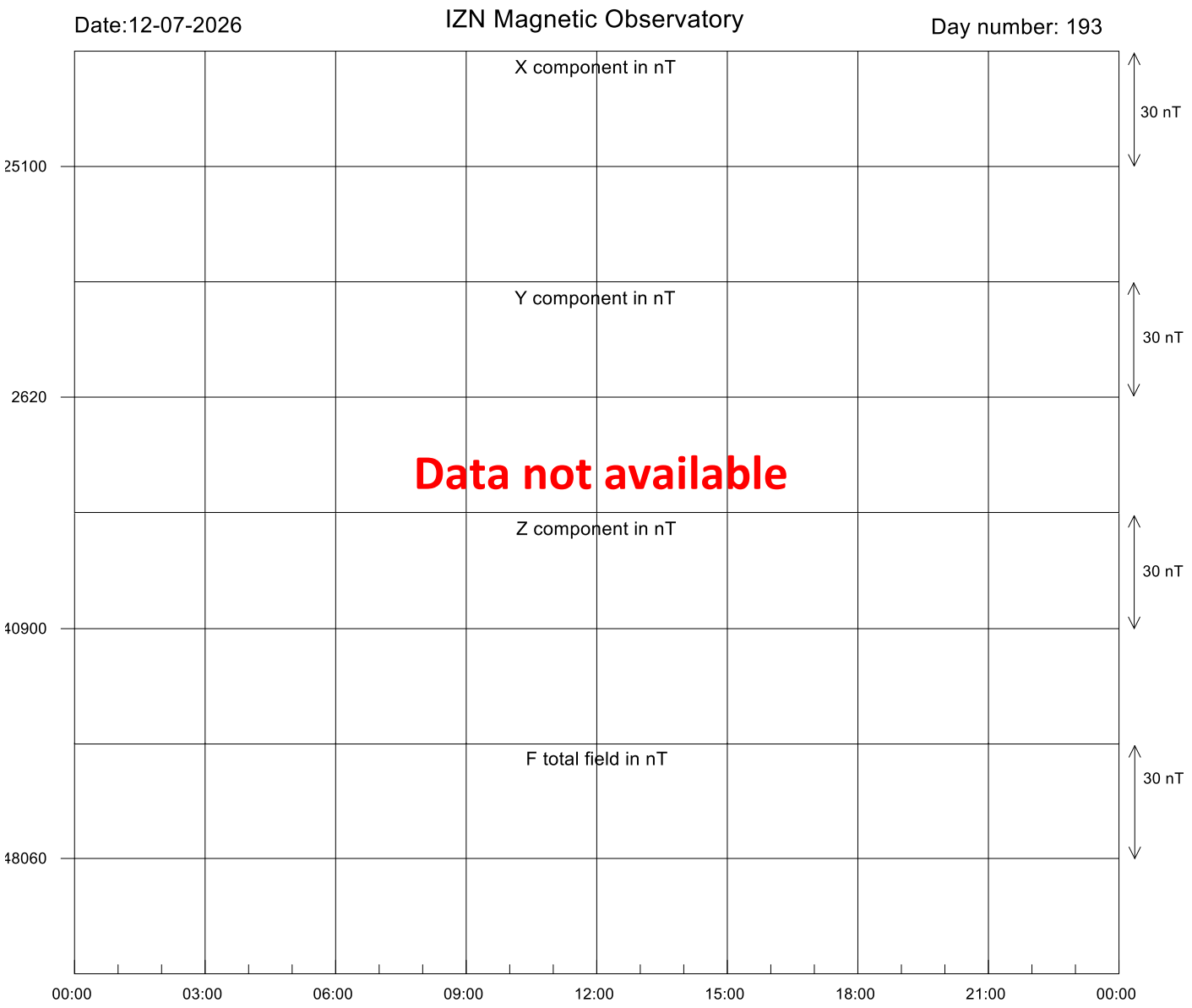

Date:07-07-2026
IZN Magnetic Observatory
Day number: 188
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

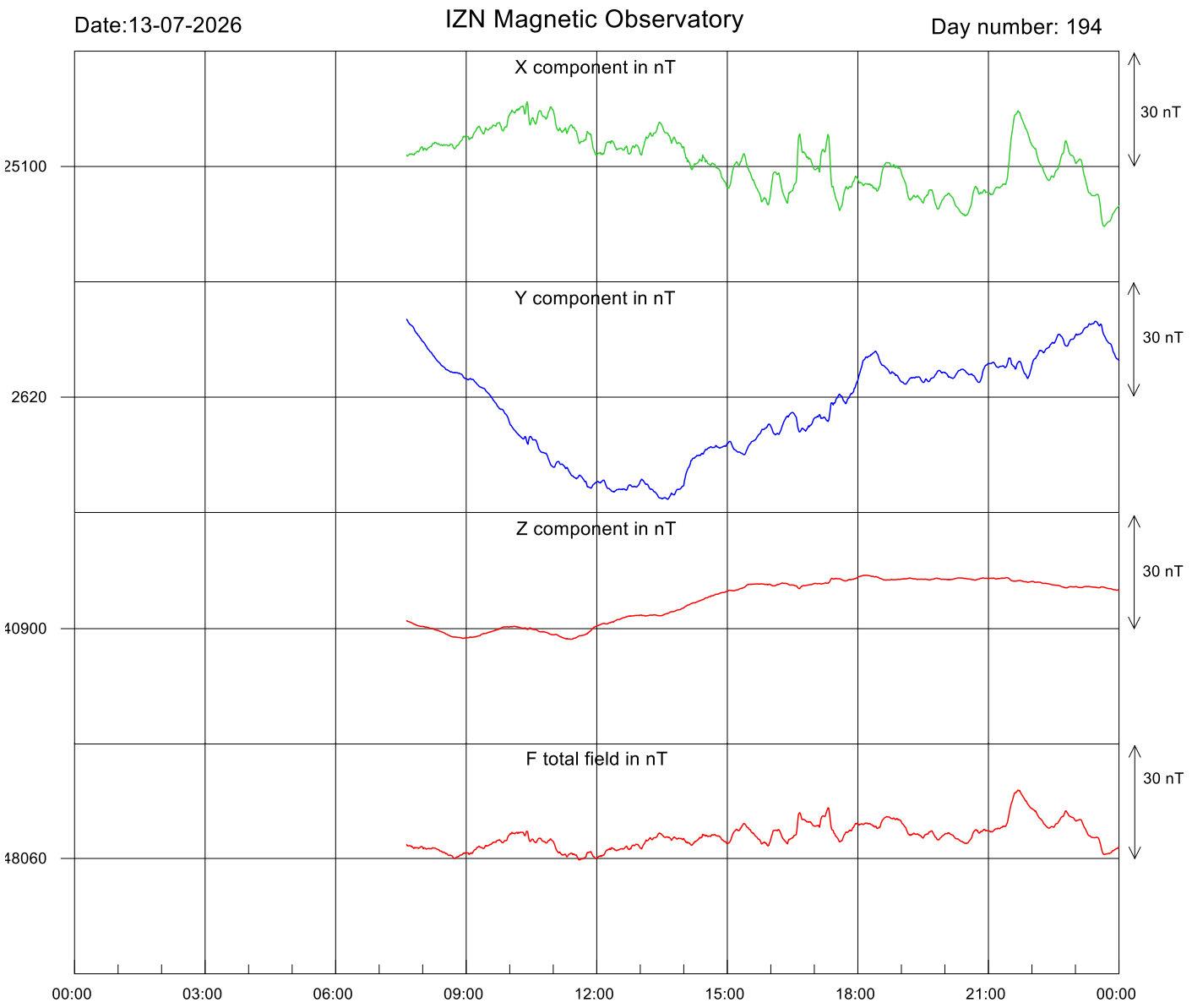

Date:08-07-2026
IZN Magnetic Observatory
Day number: 189
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

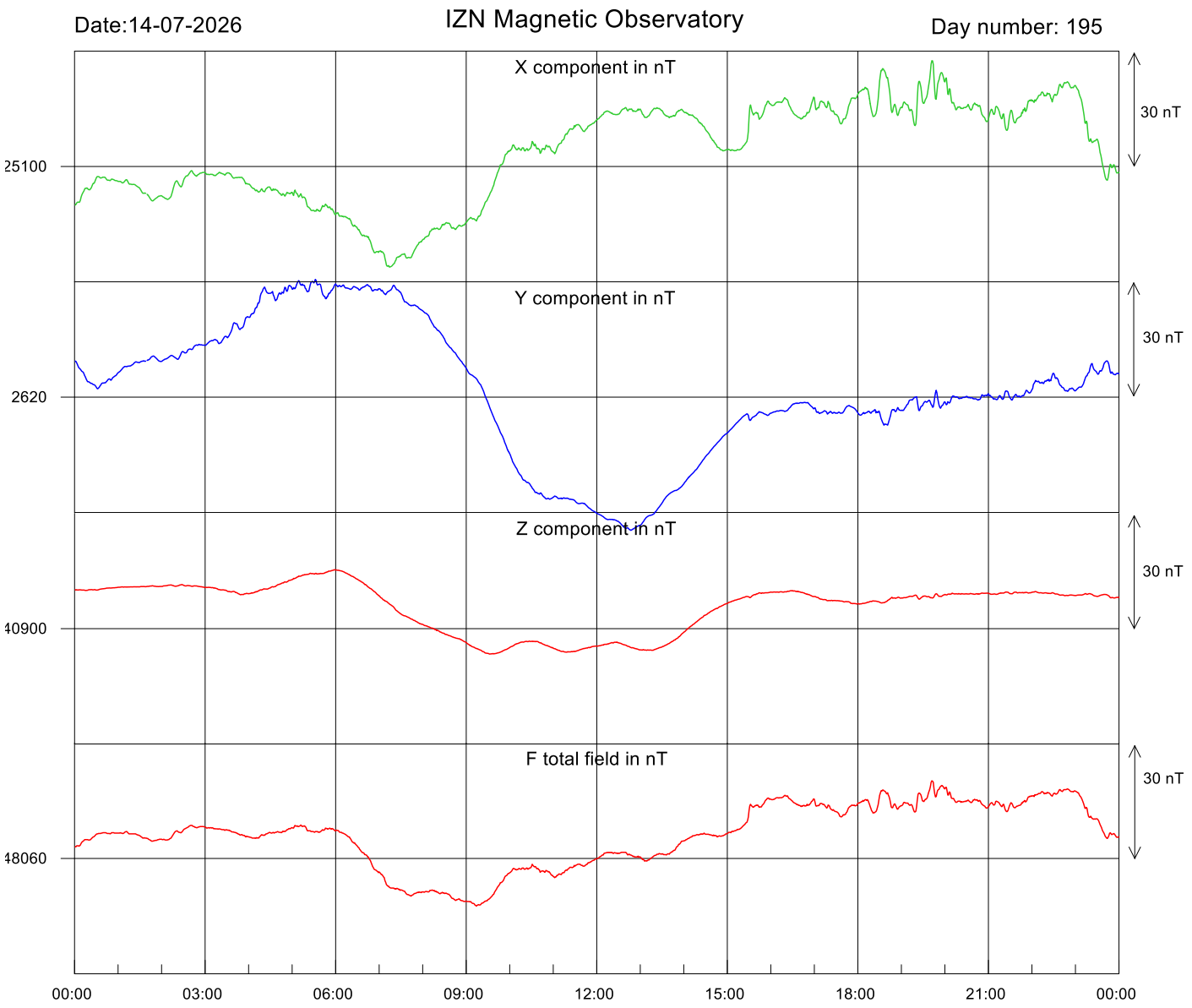

Date:09-07-2026
IZN Magnetic Observatory
Day number: 190
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

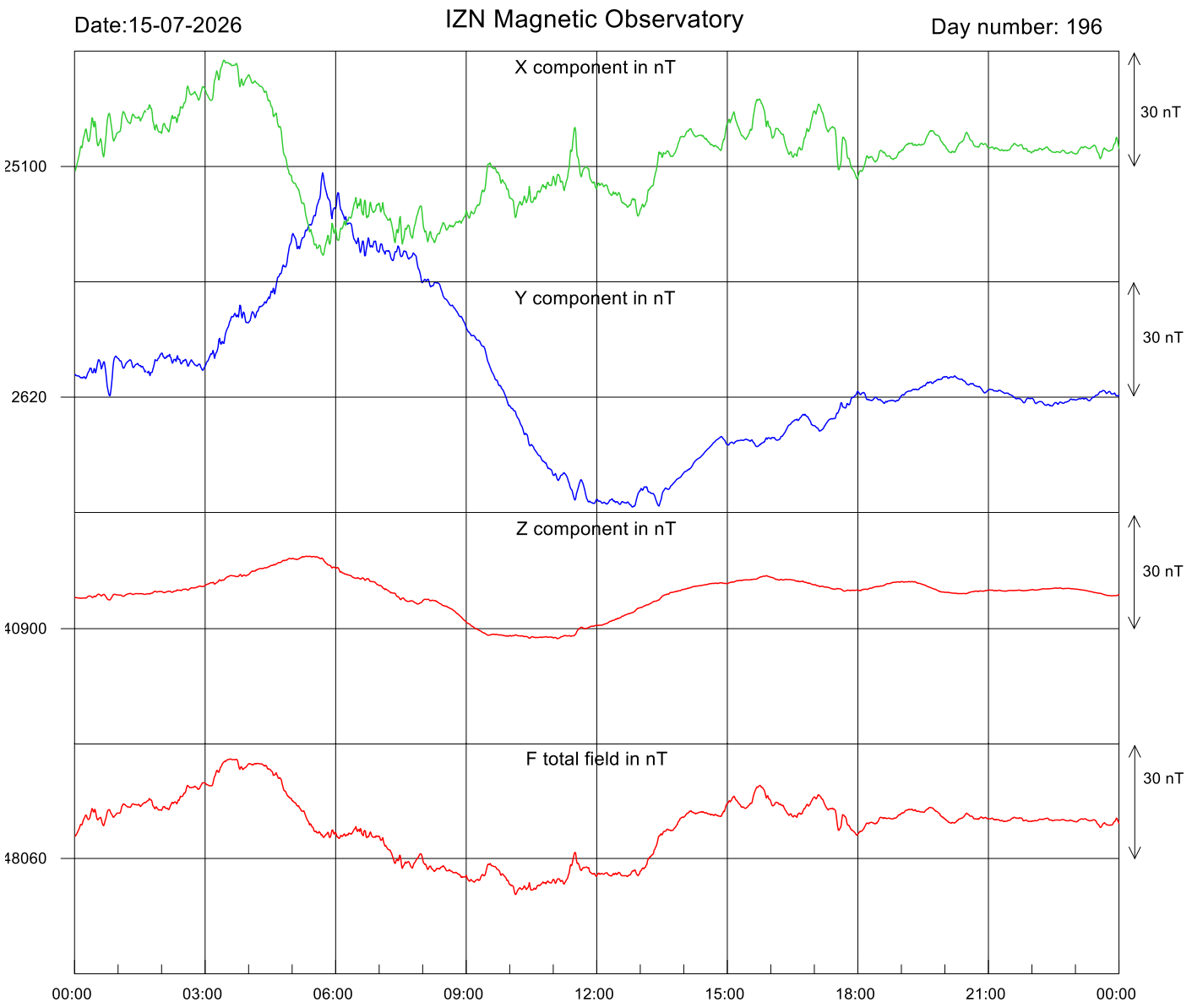

Date:10-07-2026
IZN Magnetic Observatory
Day number: 191
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

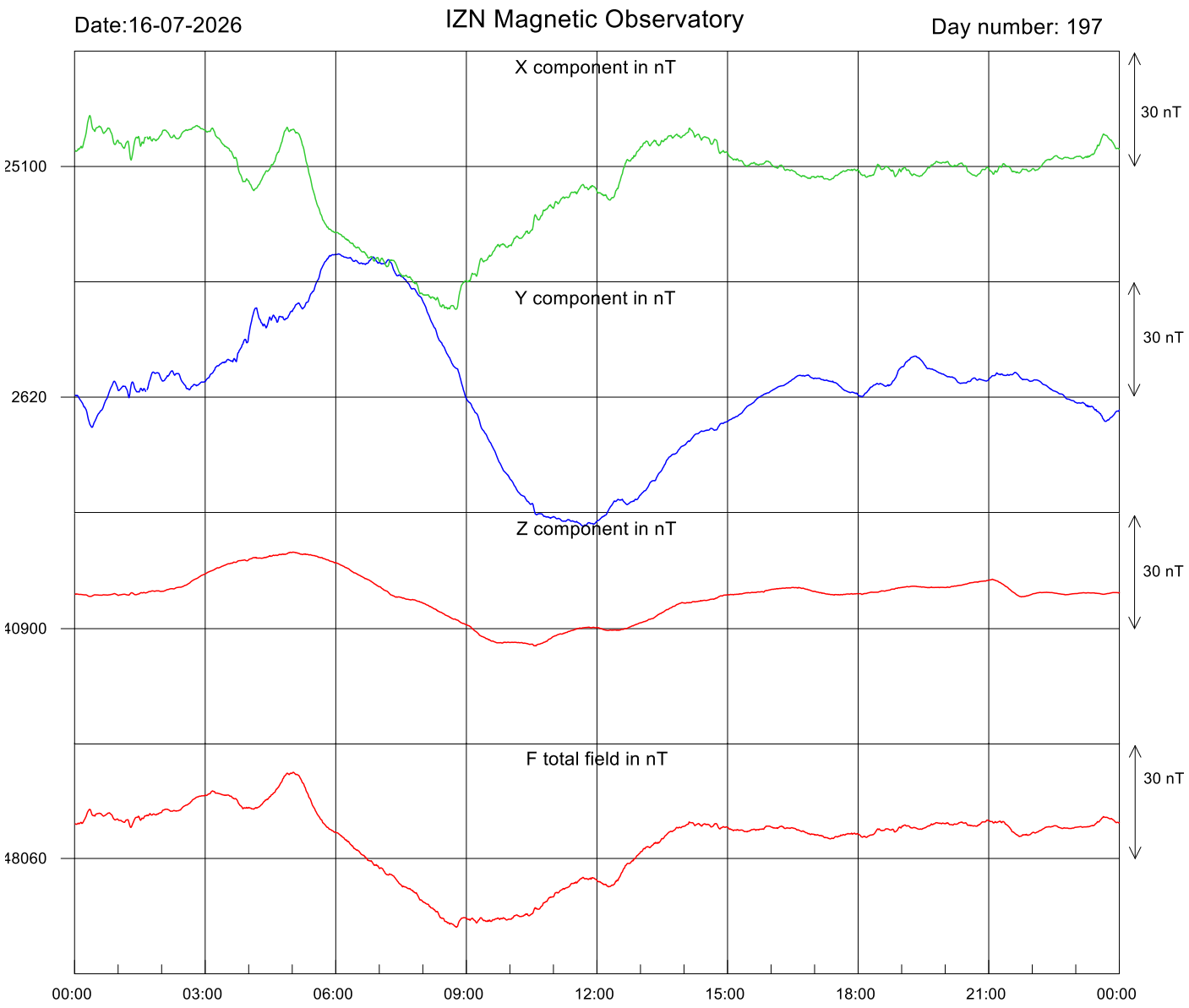

Date:11-07-2026
IZN Magnetic Observatory
Day number: 192
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

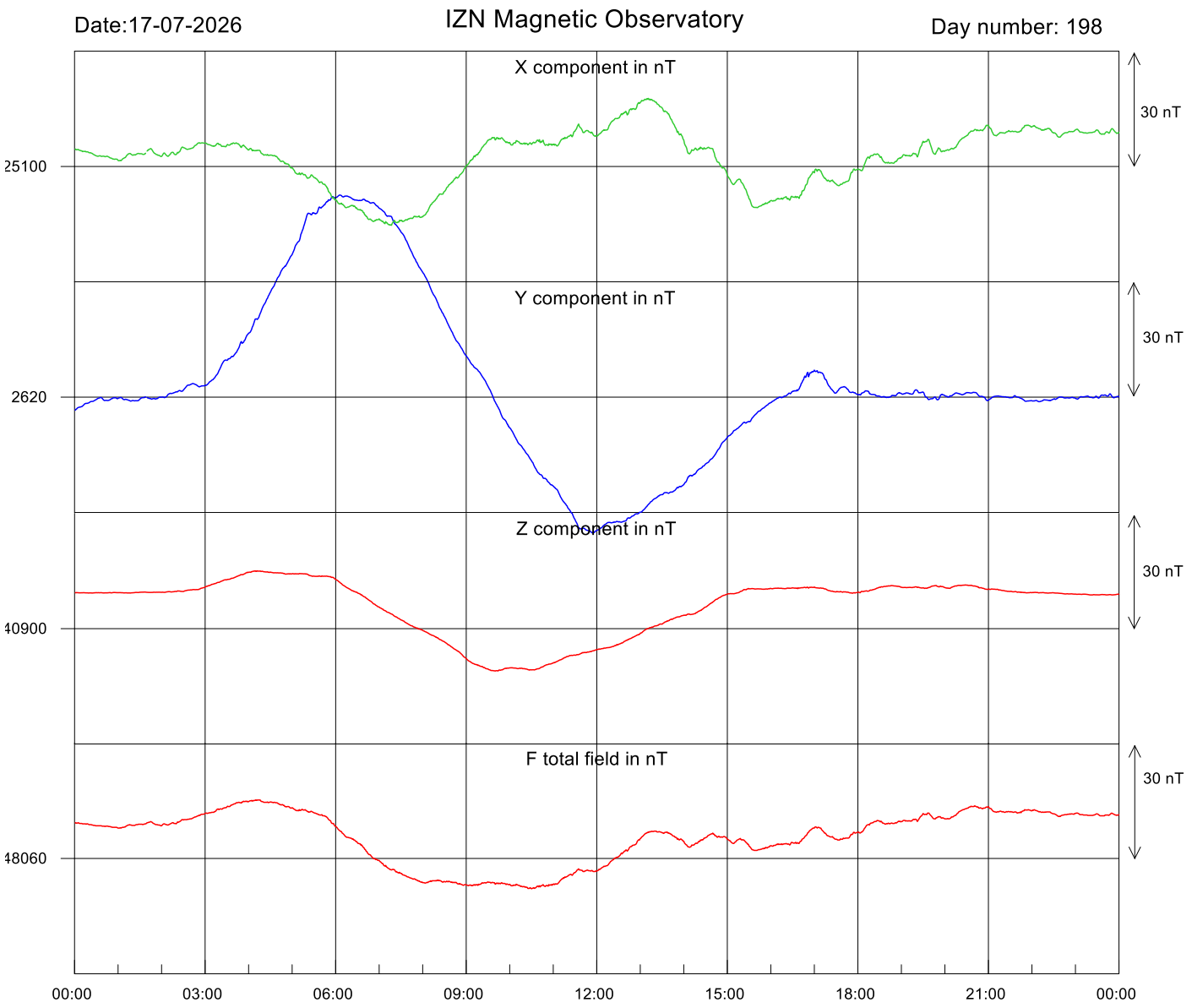

Date:12-07-2026
IZN Magnetic Observatory
Day number: 193
X component in nT
30 nT
25100
Y component in nT
30 nT
2620
Data not available
Z component in nT
30 nT
40900
F total field in nT
30 nT
48060
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

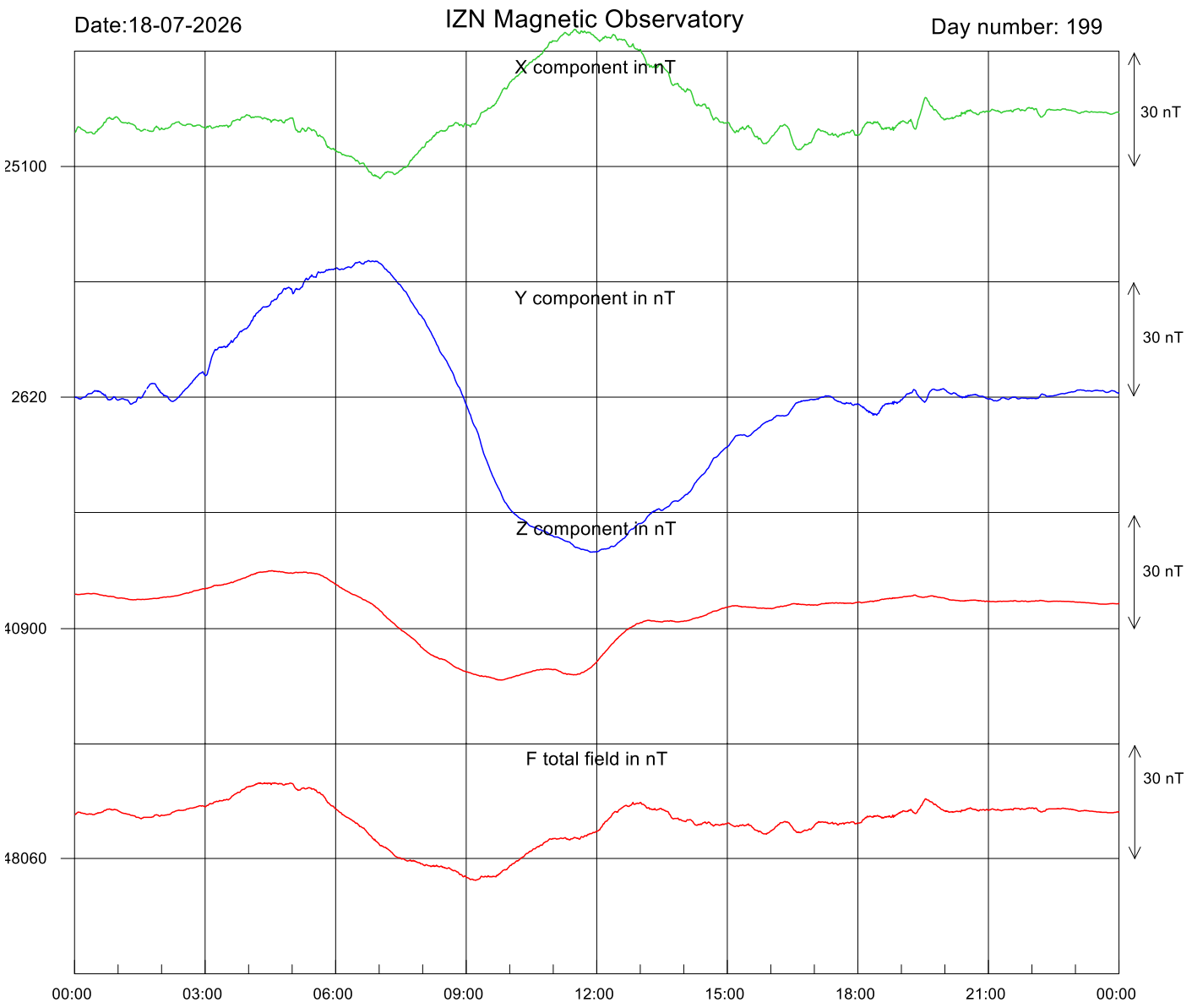

Date:13-07-2026
IZN Magnetic Observatory
Day number: 194
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

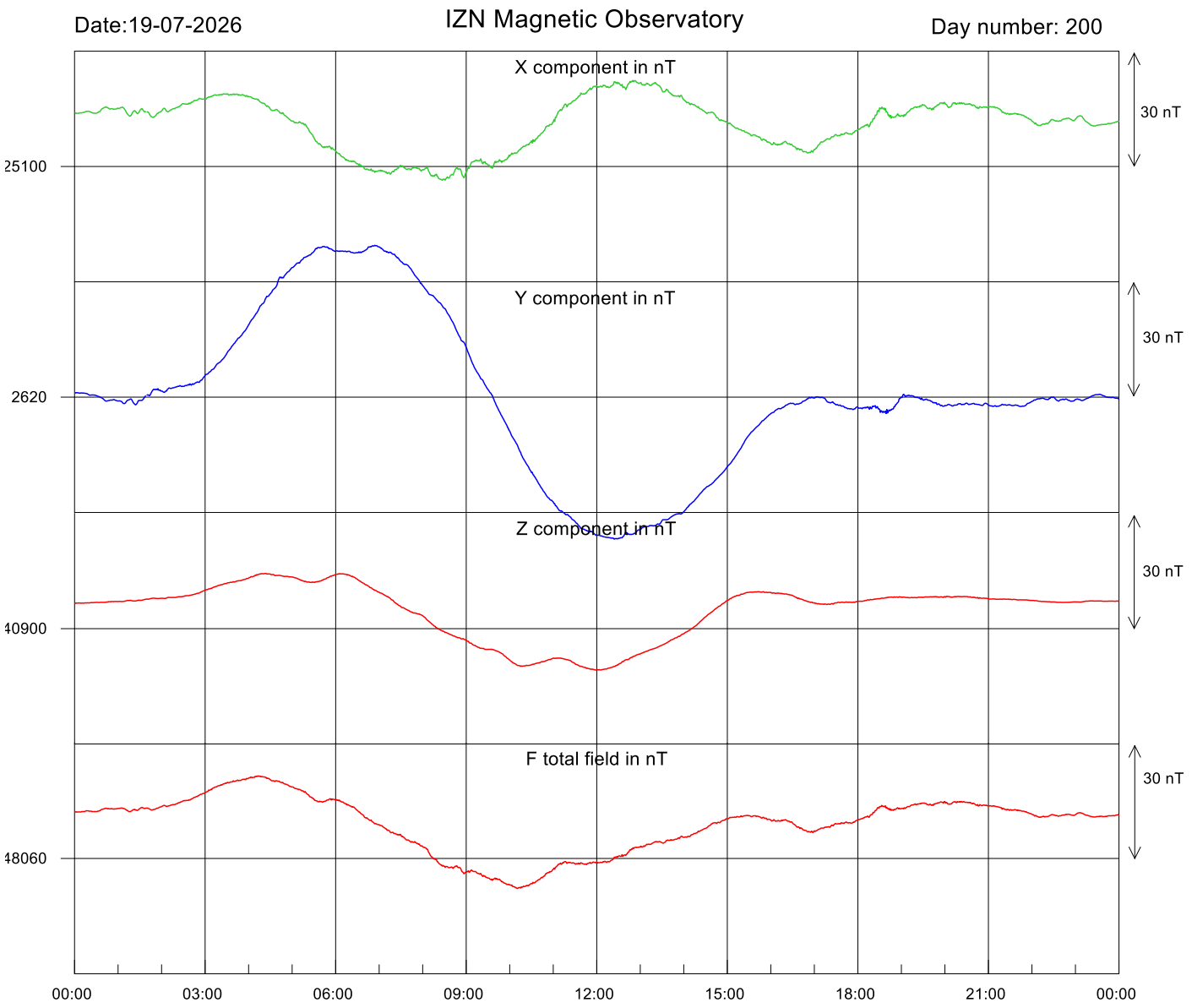

Date:14-07-2026
IZN Magnetic Observatory
Day number: 195
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

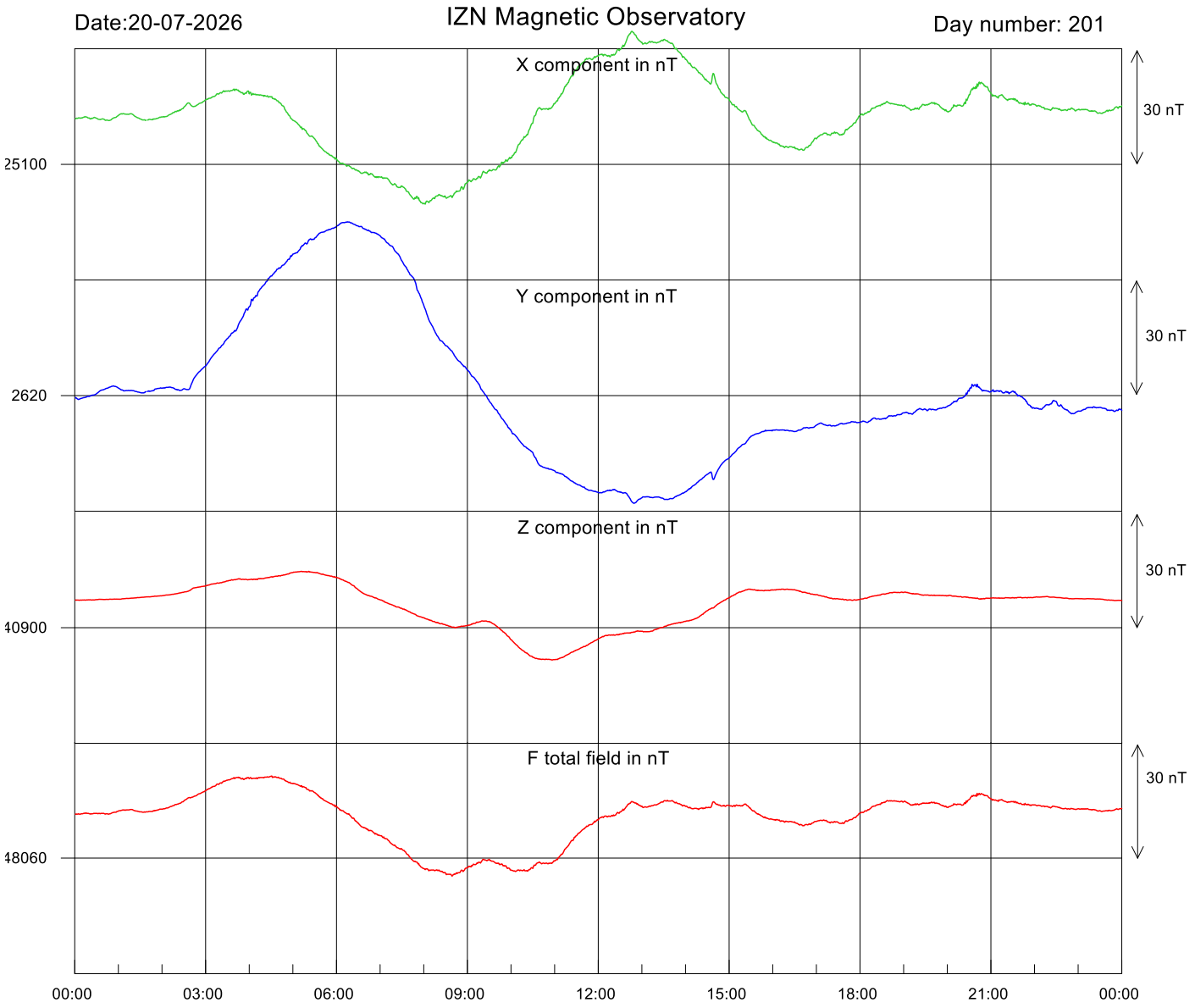

Date:15-07-2026
IZN Magnetic Observatory
Day number: 196
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

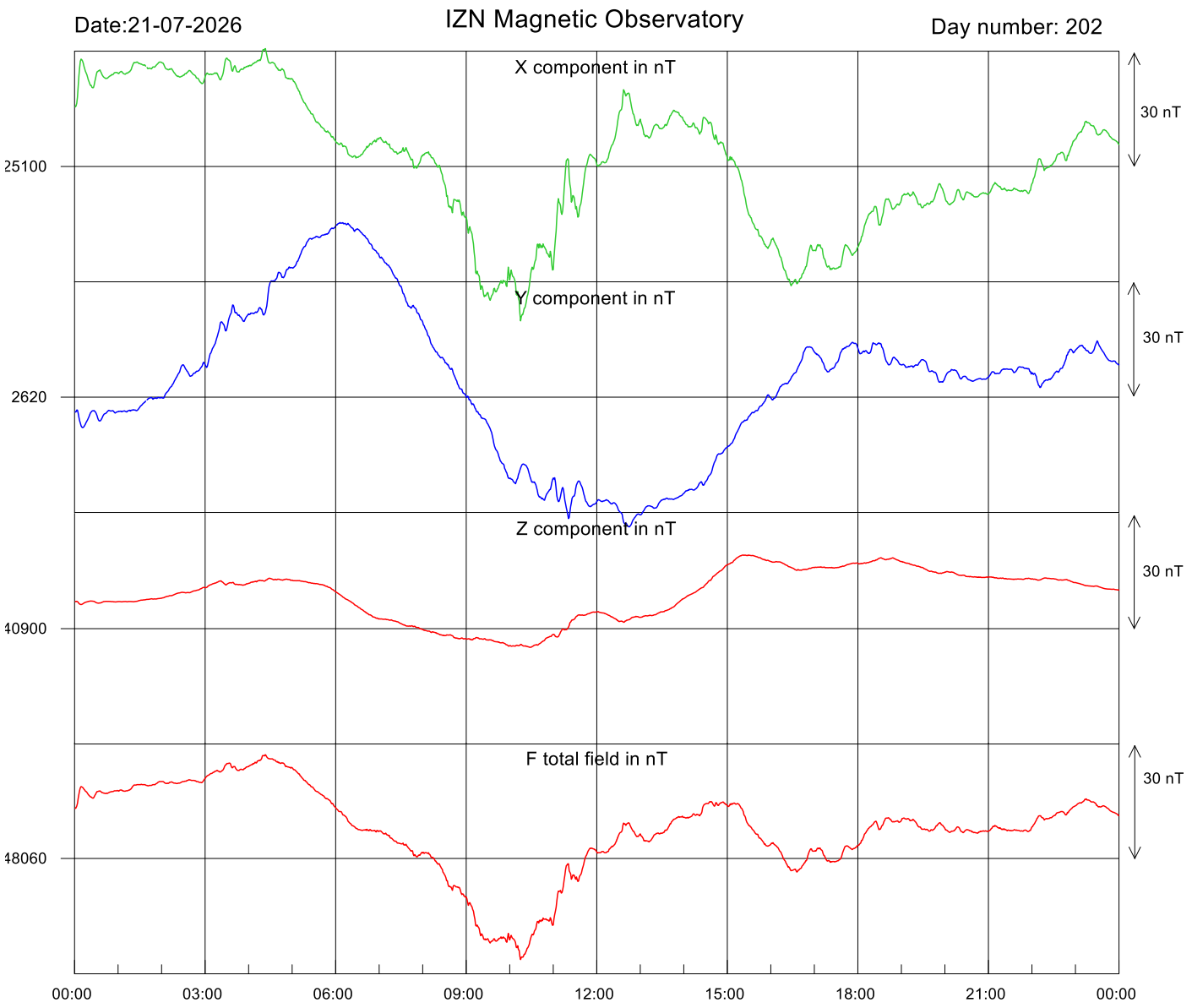

Date:16-07-2026
IZN Magnetic Observatory
Day number: 197
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

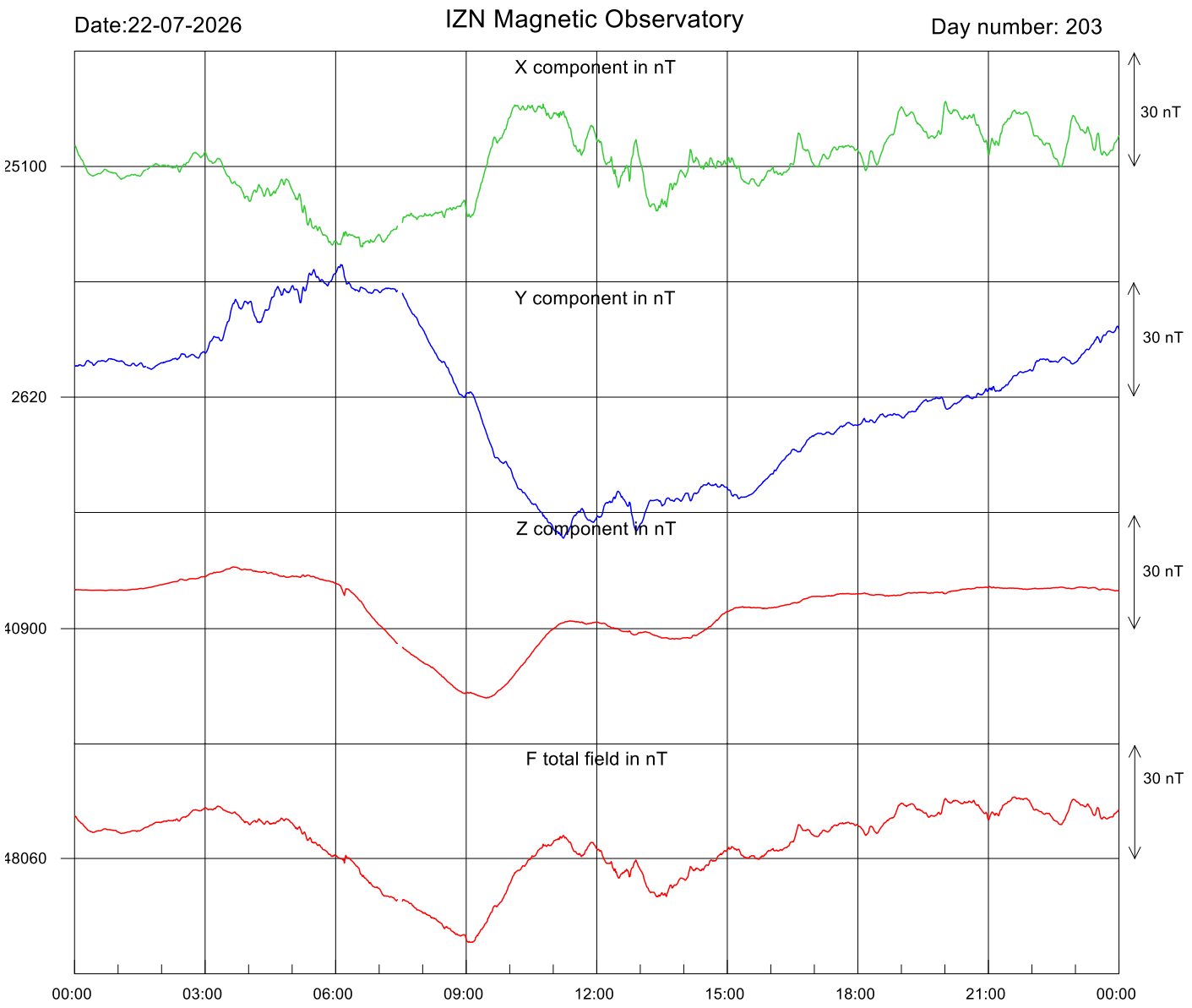

Date:17-07-2026
IZN Magnetic Observatory
Day number: 198
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

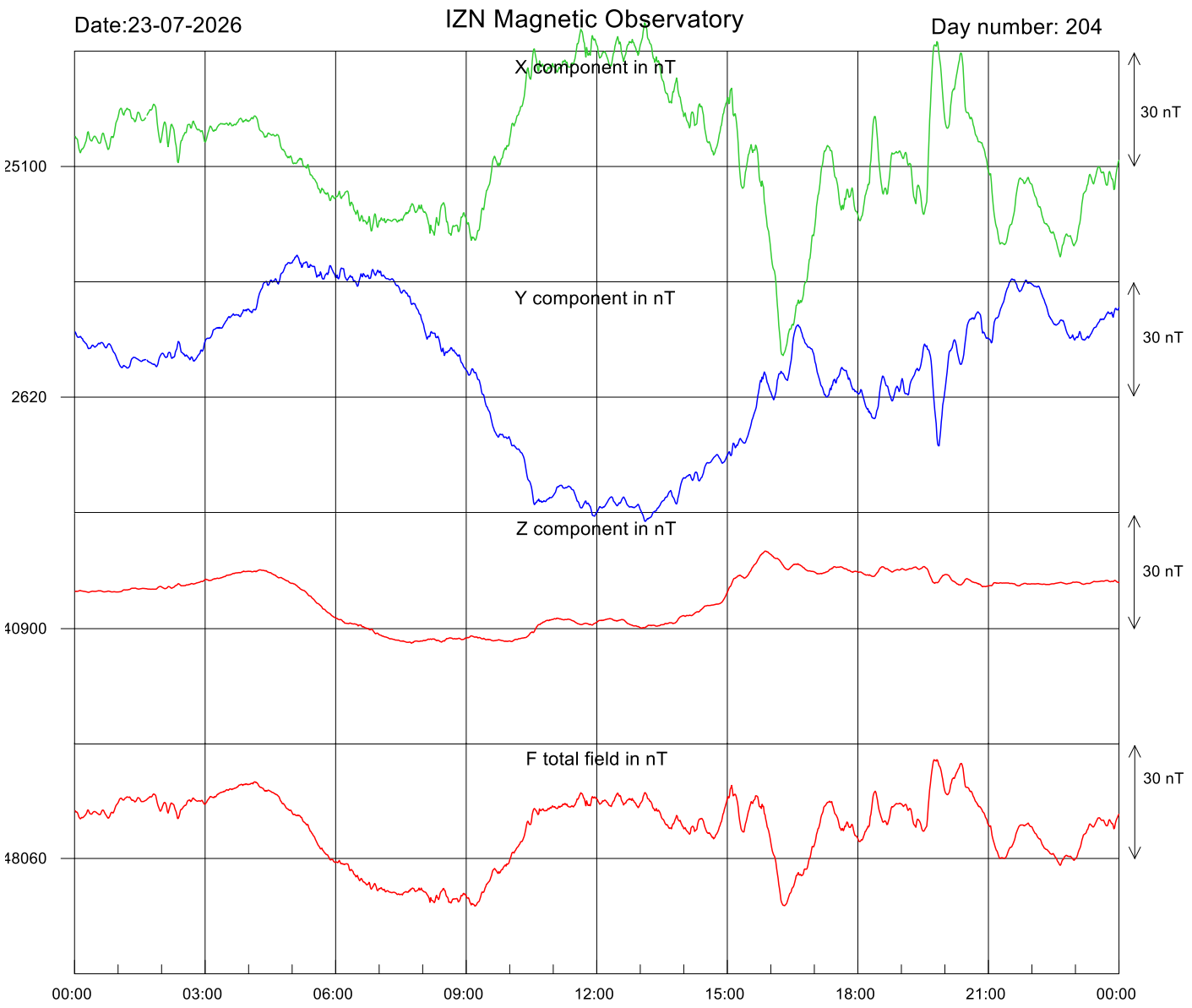

Date:18-07-2026
IZN Magnetic Observatory
Day number: 199
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

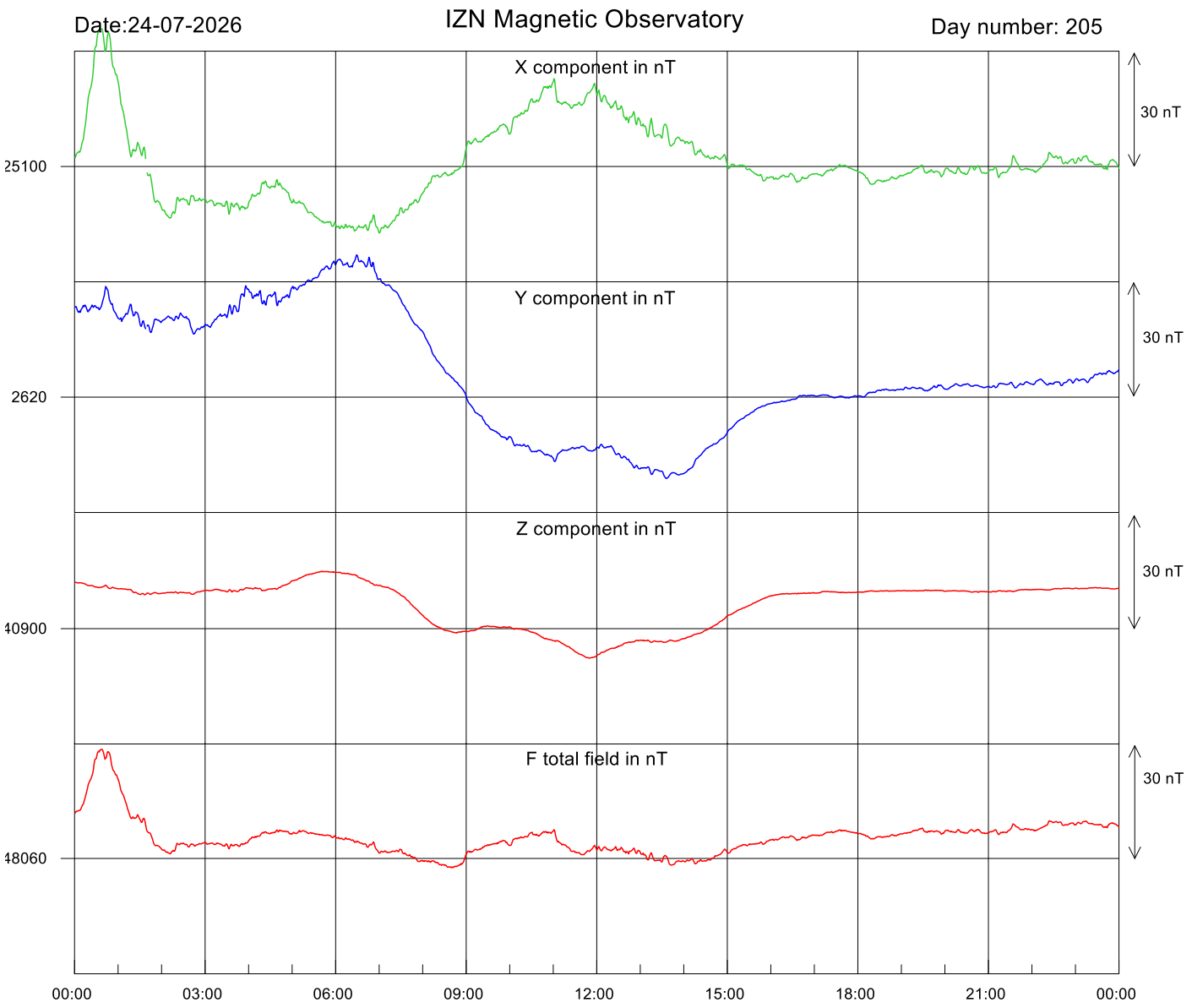

Date:19-07-2026
IZN Magnetic Observatory
Day number: 200
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

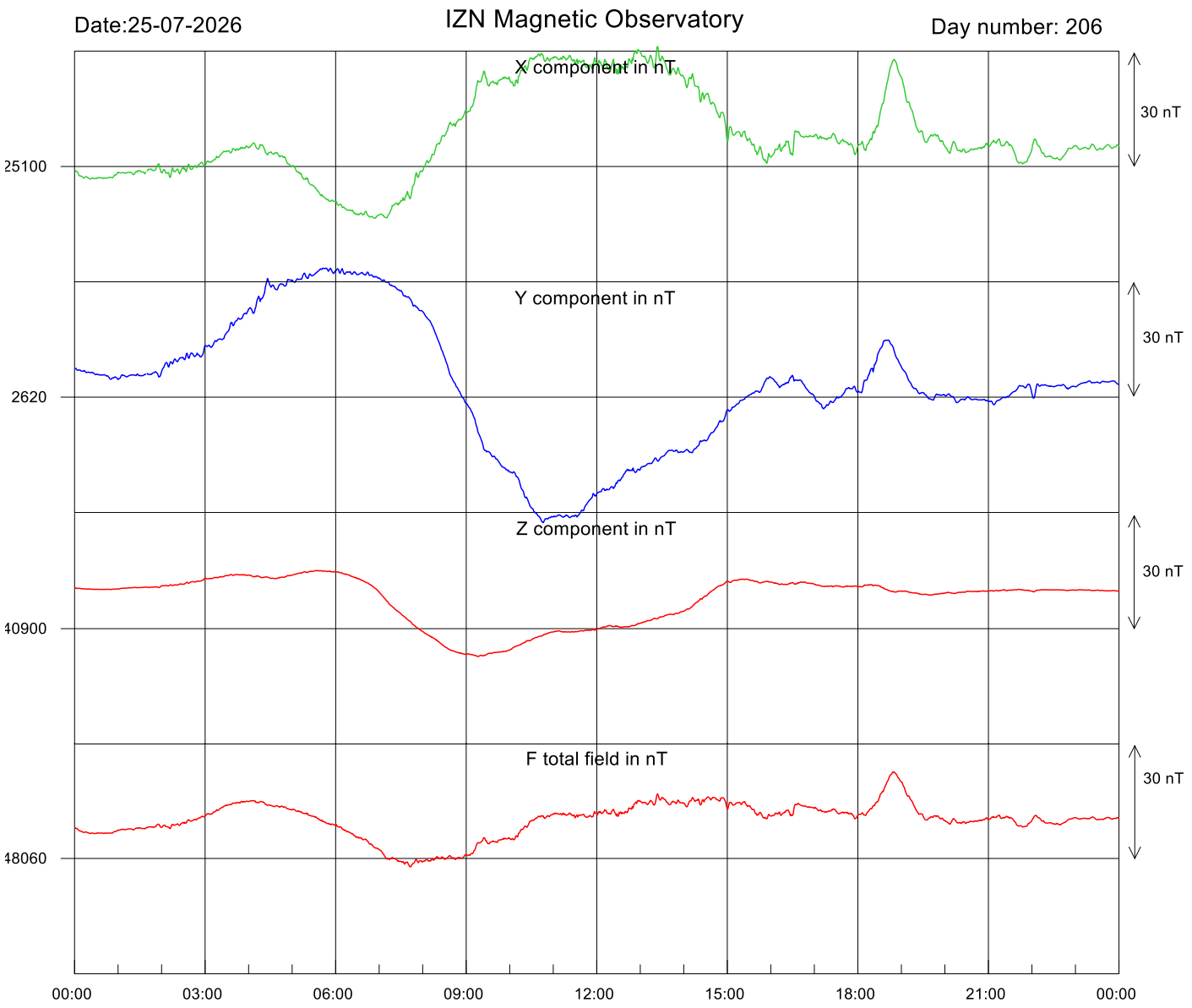

Date:20-07-2026
IZN Magnetic Observatory
Day number: 201
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

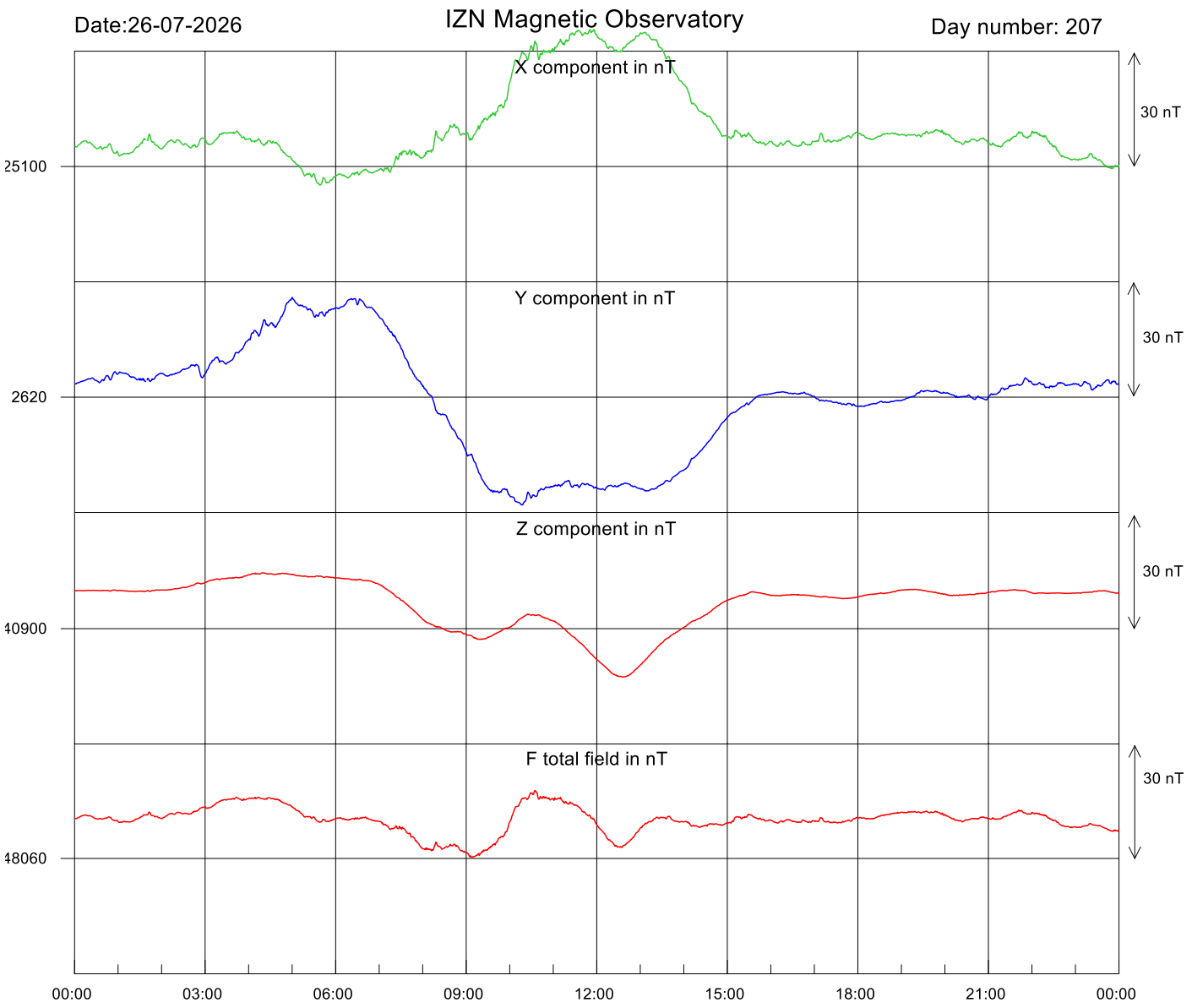

Date:21-07-2026
IZN Magnetic Observatory
Day number: 202
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

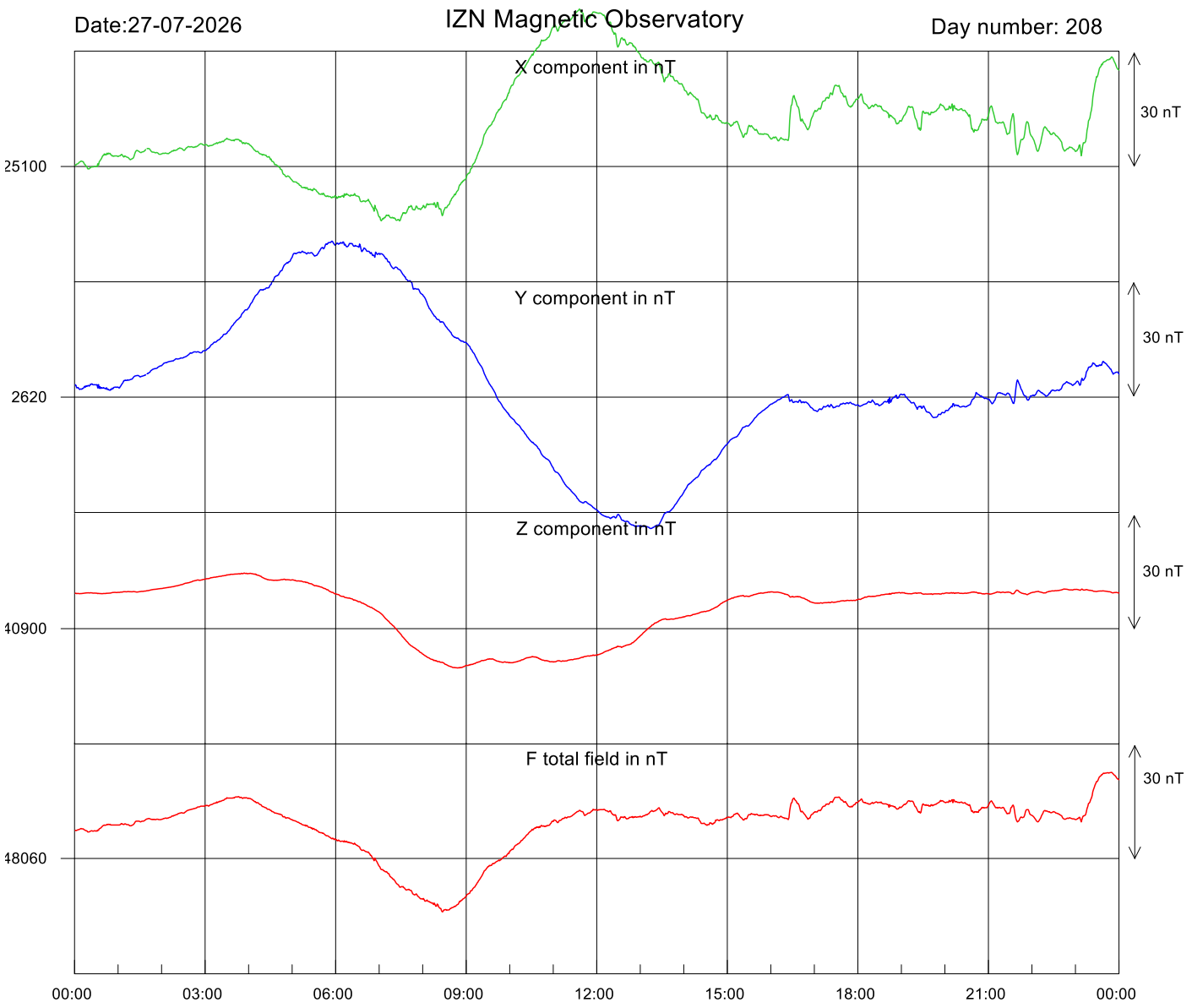

Date:22-07-2026
IZN Magnetic Observatory
Day number: 203
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

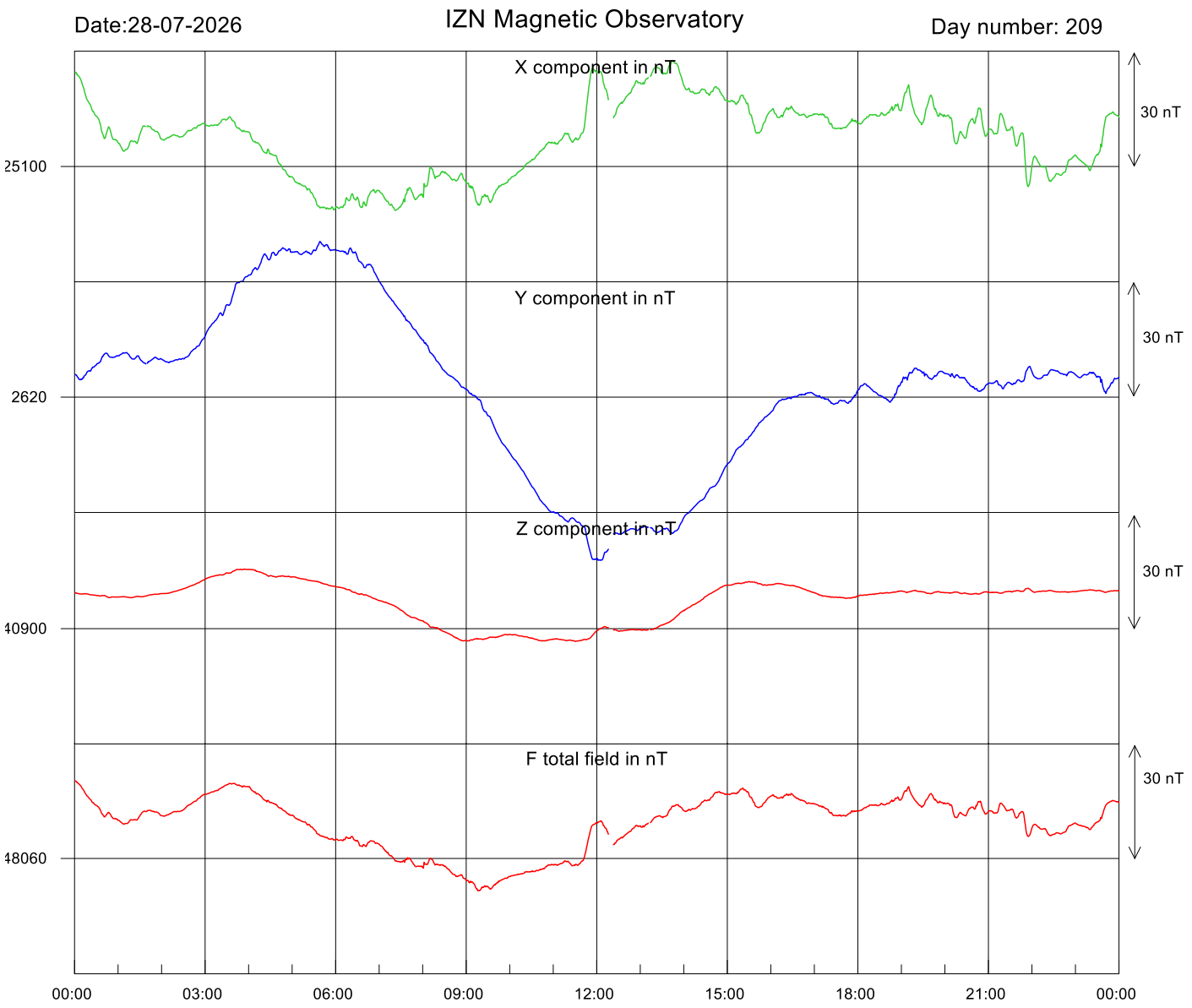

Date:23-07-2026
IZN Magnetic Observatory
Day number: 204
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

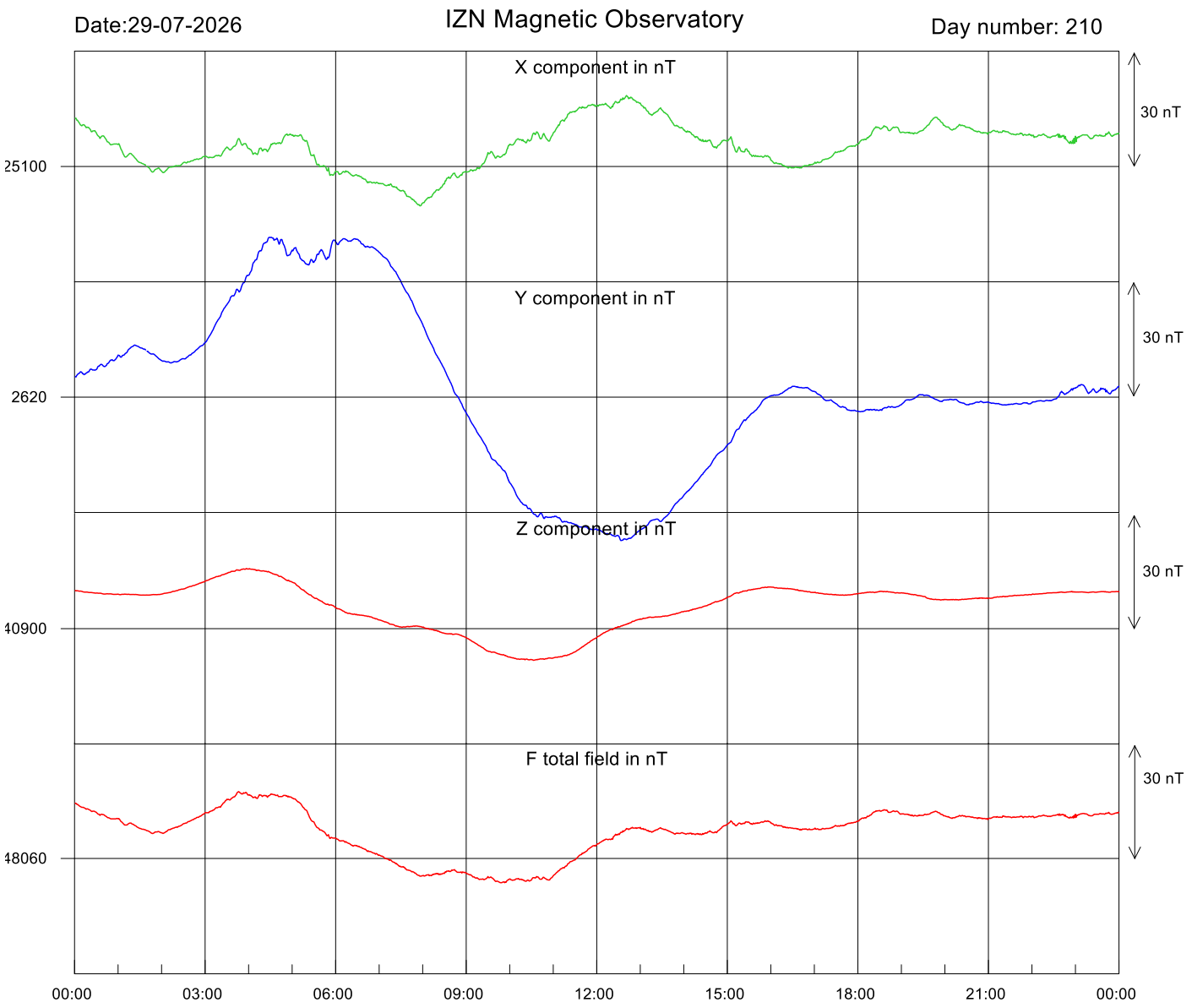

Date:24-07-2026
IZN Magnetic Observatory
Day number: 205
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

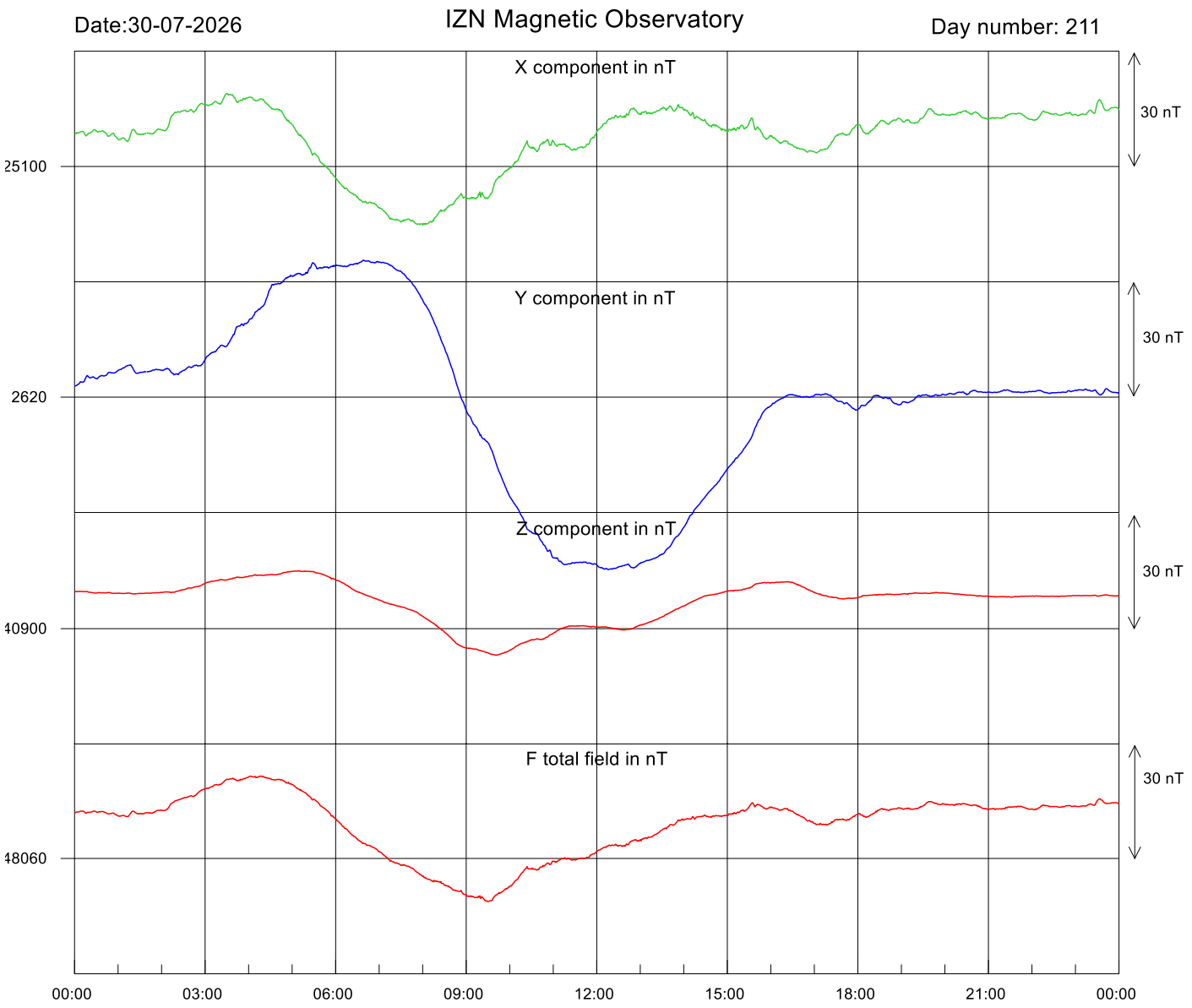

Date:25-07-2026
IZN Magnetic Observatory
Day number: 206
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

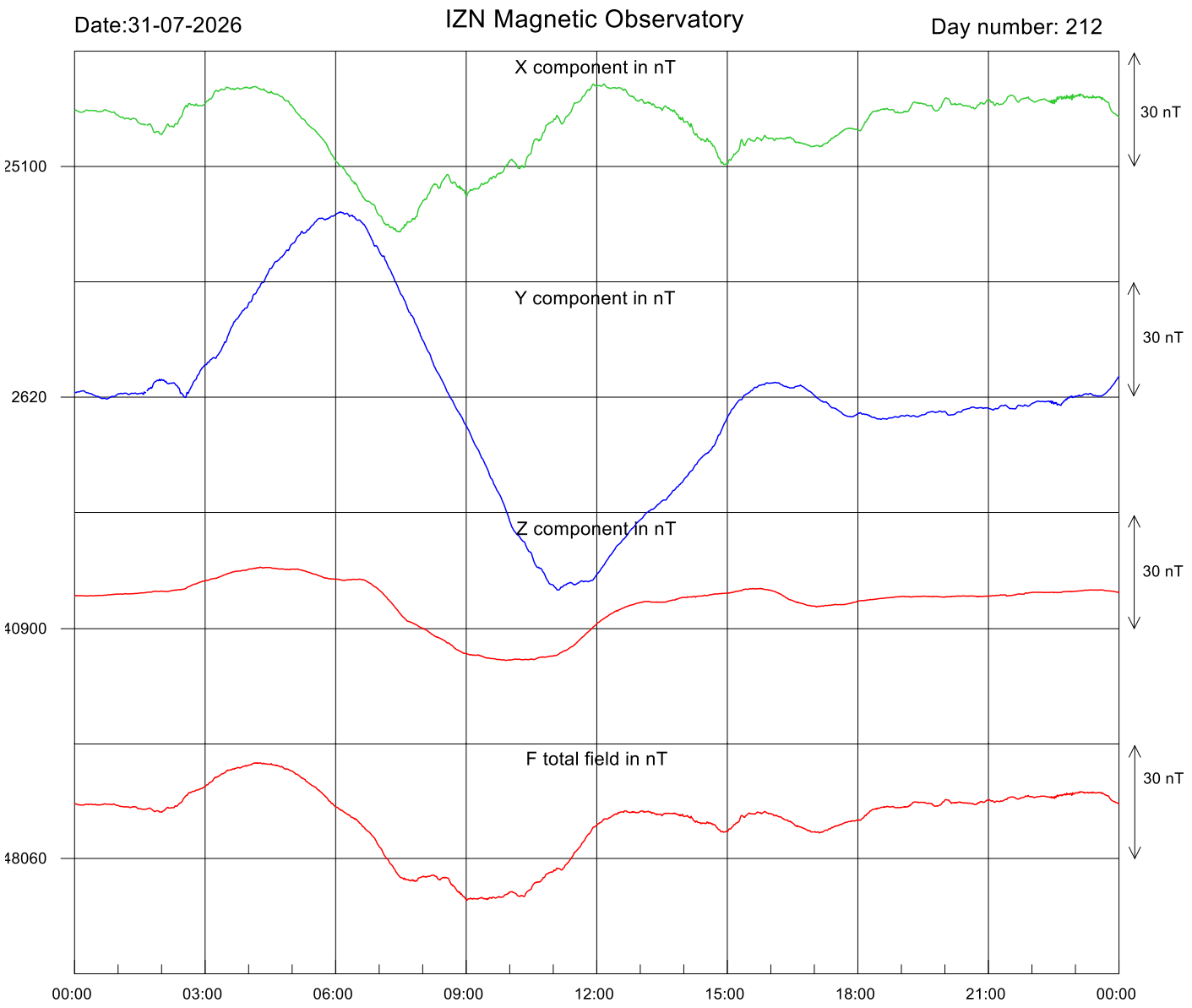

Date:26-07-2026
IZN Magnetic Observatory
Day number: 207
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00


Date:27-07-2026
IZN Magnetic Observatory
Day number: 208
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00


Date:28-07-2026
IZN Magnetic Observatory
Day number: 209
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

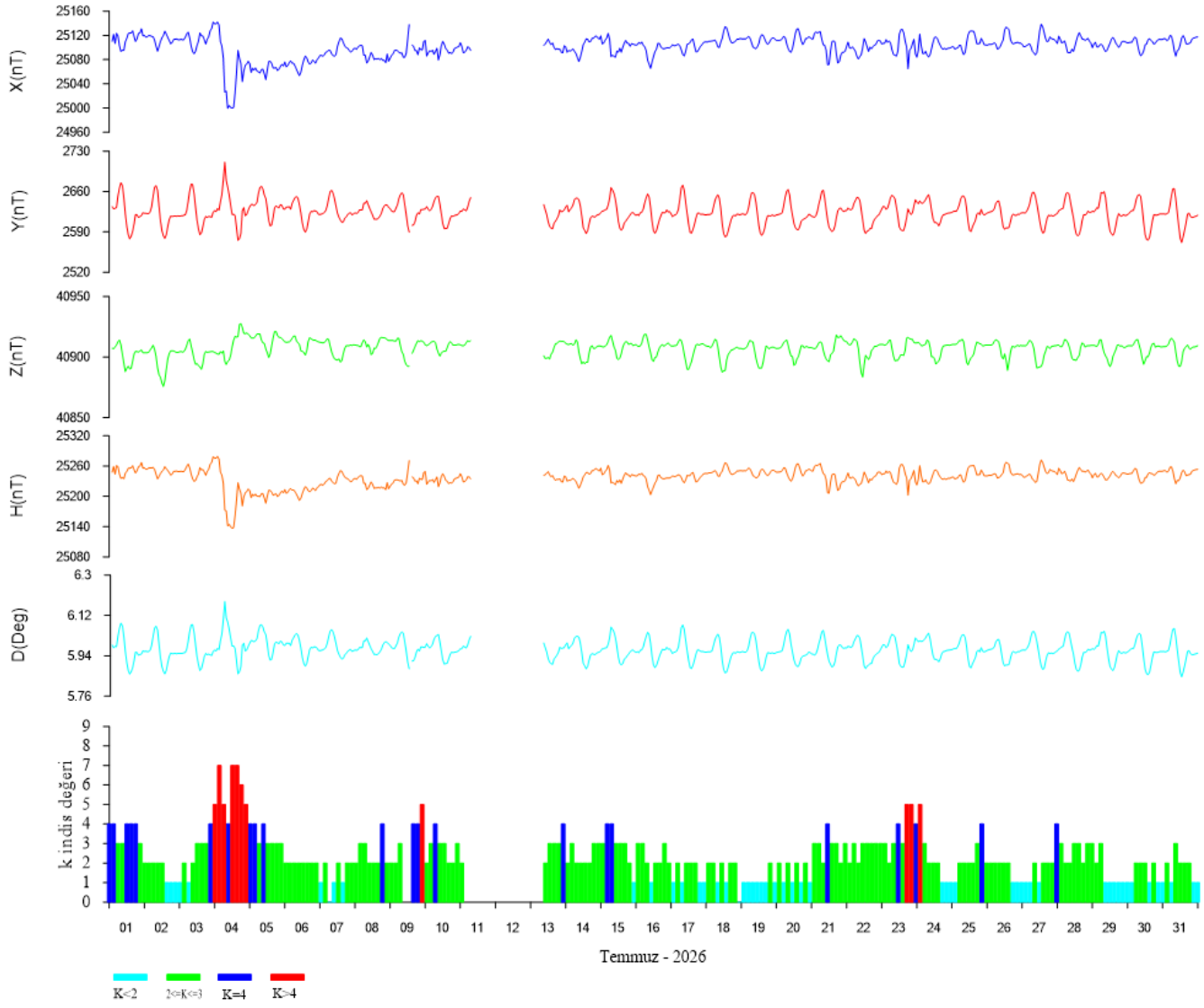

Date:29-07-2026
IZN Magnetic Observatory
Day number: 210
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00


Date:30-07-2026
IZN Magnetic Observatory
Day number: 211
X component in nT
25100
30 nT
Y component in nT
2620
30 nT
Z component in nT
40900
30 nT
F total field in nT
48060
30 nT
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00




Şekil-1. İznik Manyetik Rasathanesi'nde kaydedilen 2026 Temmuz ayı günlük manyetik alan değişimi.

Figure-1. Daily geomagnetic variation recorded at İznik Geomagnetic Observatory in July, 2026.




Şekil-2. 2026 Temmuz ayı yer manyetik alanın değişimi ve K aktivite değeri.

İznik Manyetik Rasathanesi'nde 01 – 31 Temmuz 2026 tarihlerinde kaydedilen yer manyetik alanın günlük değişimi sırasıyla X, Y, Z, H ve D bileşenlerinde saatlik ortalamalar halinde verilmiştir. En alttaki grafik İznik Manyetik Rasathanesi verileri kullanılarak hesaplanan K aktivite değerini göstermektedir. 04, 09, 23 ve 24 Temmuz tarihlerinde K aktivite değeri 4'ün üzerine çıkmıştır. 01, 03, 05, 08, 10, 13, 15, 21, 25 ve 27 Temmuz tarihlerinde ise K değeri 4 civarlarındadır. Diğer günlerde yermanyetik alanı daha sakin değişim göstermiştir.

Figure-2. Daily geomagnetic variation in July 2026, and K activity index.

The hourly mean variation of X, Y, Z, H and D components at İznik Geomagnetic Observatory between 01 – 31 July, 2026 are given. The bottom chart shows the K activity index obtained from IZN data. As seen, its value is above 4 on the days 04, 09, 23 and 24, and around 4 on the days 01, 03, 05, 08, 10, 13, 15, 21, 25 and 27 in July. The other days, geomagnetic field showed quiet variation.